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GAILLARD'S
MEDICAL JOURNAL.

Geo. Tucker Harrison, M.A., M.D., 221 West 23d Street. } Associate Editors. { J. H. Claiborne, Jr., M.D., 10 East 28th Street.

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VOLUME L.

JANUARY TO JUNE.

1890.

NEW YORK:
M. E. GAILLARD
MDCCCXC.

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INDEX TO VOLUME L.

PAGE.

A

Abdomical Section, by L. S. McMurtry, A.M., M.D 133
Absinthe, A physiological study of it 95
Accoucheur, the Responsibility of, by Henry C. Coe, M.D., New York 451
Allopecia Areata, Treatment of it. Dr. Dubreuilh 305
Aletris Cordial 303
Aluminium Acetico—Tartaricum. Dr. Max Schaeffer, Bremen 529
Anæsthetics, The Experiments on it by T. Lauder Brunton, M. D., LL. D., F.R.C.P., London 480
Analgesic Action of Methyl—Acetanilide or Exalgine. Dr. Thomas R. Fraser 485
Anchylosis of Right Knee. Dr. Ludwig Hecktoen 268
Aneurism of the Aorta. Remarks by R. Douglass Powell, M.D., F.R.C.P 497
Aneurism, Clinical Lecture, by Chr. Heath, F.R.C.P 488
Aneurism, Aorta—Diagnosis and Treatment. 274
Antiseptic, new 412
Appendages, the Removal of Diseased—the Ultimate Results of Laparotomy. By H. C. Coe, M.D 569
Appendicitis, by Robert Milbank, M.D 396
Appendicitis, catarrhal and ulcerative, by N. Senn, M.D., Ph.D 75
Ataxy, Report by Dr. C. Borsari of Modena.. 312

B

Baruch, Simon, M.D. A Plea for the Practical Utilization of Hydrotherapy 24
Baths, Public 299
Blood, Spectroscopic Examination of, in Eye Symptoms. By Lucian Howe, M.R.C.S., Buffalo 346
Blue Mass in Small Doses 410
BOOKS AND PAMPHLETS :
  Rectal and Anal Surgery, by Edmund Andrews, M.D., LL.D 101
  Education and Culture as Related to the Health and Diseases of Women, by Dr. Alex. J. C. Skene, Brooklyn, N.Y 101
  Essentials of Physiology, by H. A. Hare, B.Sc., M.D 101
  A Handbook of Physical Diagnosis of Diseases of the Organs of Respiration and Heart, and of Aortic Aneurism. By R. C. M. Page, M.D 536
  Digestive Ferments : A Consideration of their Nature, Action, Quality, etc 536
  The Uses of Electrolysis in Surgery. By W. E. Steavenson, M.D., Cantab, M.R. C.P 537
  A New Medical Dictionary. By George M. Gould, B.A., M.D 537
  Hæmoglobin or Bullock's Blood in Therapeutics, by F. E. Stewart, M.D., Ph.A.. 537
  How to Preserve Health. By Louis Barkan, M.D., Brooklyn 538
  Seventy-second Annual Report of the N. Y. Orthopædic Dispensary and Hospital 538
  Robert Brett : His Life and Works. E. P. Dutton & Co 538
  The Cure of Hernia by the Use of Buried Animal Suture. Henry O. Marcy, A.M., M.D., LL.D 538
  The N. Y. Cancer Hospital—Fifth Annual Report 539
  An Experimental Study of Intestinal Anastomosis. Dr. J. D. S. Davis, Birmingham, Ala 539
  Tobacco Amblyopia, by Leartus Connor, A.M., M.D 539
  Chloralamide 539
  A Rational Brace for the Treatment of Caries of Vertebræ. By Chas. F. Stillman, M.Sc., M.D., Chicago, Ill 539
  A Practical Splint for Inflammatory Conditions of Joints, by Chas. F. Stillman, M.Sc., M.D., Chicago 539
  Twenty-second Annual Report of the N. Y. Orthopædic Dispensary and Hospital 539
  The Treatment of Torticollis, by Ch. F. Steadman, M.Sc., M.D., Chicago 539
Brown, Bedford, M.D., Alexandria, Va. Remarks on Certain Obscure and Minor Forms of Pelvic Cellulitis Simulating Malarial Fever 1-11
Burns, Pathology of Severe Burns 209
Bursæ, Cases of Excision. H. H. Clutton.... 515

PAGE.

C

Calomel, Clinical Observations. R. Stintzing. 532
Carroll, Alfred Ludlow, M.D., New York. Disposal of House Refuse (Sanitary) 606
Cartwright, S. S., Roxbury, N. Y. The Use of Belladonna in Spasmodic Rigidity of the Os Uteri during Labor 233-235
Children, Nervousness of 304
Chisholm, Julian J., M. D. Persistent Headaches and How to Cure Them 221-230
Chloralamide as a Hypnotic, by W. Hale White, M.D., F.R.C.P 284
Chloroform 423
Chloroform in Young Children. Reports of Dr. Sherman Noble Smith 486
Climates of Altitude, Action of, in Chest Diseases 403
Club Foot, Treatment of. Carter S. Cole.... 353
Cocoanut as a Vermifuge 412
Codeine in Abdominal Pain 415
Coe, Henry C., M.D. How Soon After Deliv-
Colon, Acute Invagination of the 639
ery Does the Accoucheur's Responsibility Cease? 451
Compression of the Brain and Spinal Cord, by Dr. Adamkiewicz, Vienna 252
Conclusions of the Hyderabad Commission.. 423
Congenital Malformation of Male Organ, by
Constitutional Liability to Disease, by M. H. Simmons, M.D., Surgeon U. S. Navy 611
Cranium, Foreign Bodies in the 636
Edgar W. Robertson, M.D 402
Creasote, the Value of It, by Wm. Perry Watson, A.M., M.D 77
Cystitis, chronic, in Women, Dr. Hunter McGuire, Richmond, Va 509
Cystotomy, Report of cases of Supra-Pubic, A. Vander Veer, M.D 337

D

Dabney, William C., M.D. The Physiological Action and Therapeutie Uses of the Water of the Greenbrier White Sulphur Springs.331-336
Deafness, without apparent Lesion 519
Diarrhœa, Summer 533
Diphtheria, Treatment of. Illustrated by Cases, by R. W. Sutton Barraclough, M.D., L.R.C.P 601
Dread of Death 210
Dressings, practical points about surgical dressings, A. Vander Veer, M.D 210

E

Ears, the ear in criminals 431
Eclampsia, puerperal, John Herbert Clairborne, M.D 12
Eczema, Local Treatment in Elderly People (Pharmacy) 616
EDITORIALS :
  "Taking Stock" by Physicians—Nous Nous Soutenons—The Grand Meeting of the Southern Surgical and Gynæcological Society—The Russian Grip—Retirement of Dr. J. Herbert Claiborne, Jr.—Our Original Abstract Department—Death of Dr. James Hutchinson—A Happy New Year to our Readers 106-110
  On Inflammation—La Grippe—Instruction for Graduates 215-220
  Heredity of Talent—The Central Texas Medical Association—Elevation of the Medical Profession—The State Medical Society of N, Y.—Meeting of the Army Medical Board—Electricity in Gynæcology 327-330
  Anæsthesia — Electricity in Gynæcology 436-440
  The Sick Physician—Tuberculous Soldiers—Ignorance in High Places.... 545-548
Electricity, the Value of it in Gynacology, W. S. Plaifair, M.D., L.L.D., F. R.C.P 254
Electricity in Gynæcology, Franklin H. Martin, M.D 294
Empyema. James A. Goggans, M.D 118
Endometritis, corporeal. G. E. Herman, M.B., F.R.C.P 359
Enema, Magnesia Sulphate as. T. J. Watkins, M.D 207
Epididymitis, Local Application of Chloroform 409
Epilepsy and Chorea 197
Exalgine, the Physiological Action of 205
Eye Symptoms as Aids to Diagnosis. David Cocks, New York 459

PAGE.

Eye Strain, its Causes and Symptoms, by Dr. F. Valk, New York.......... 547-556

F

Faradization, Bi-polar—the Value of It in Gynæcology. Dr. A. Lapthorn Smith...... 290
Fibromata, Treatment of it by Electricity. Dr. A. H. Buckmaster, Brooklyn.......... 290
Fistula, the Question of Operation upon Fistula in Phthisis, by H. W. Allingham, F.R.C.S.......... 571
Foods for Invalids and Infants. I. Burney Yeo, M.D., F.R.C.P.......... 168
Foot-Crush, Pirogoff's Amputation. Dr. Ludwig Hecktoen, Chicago.......... 270
Foreign Bodies in the Cranium.......... 636
Fracture of the Humerus, by Wm. Perrin Nicolson, M.D.......... 20
Fractures, Treatment of Compound. Dr. McCann.......... 519

G

Gangrene of Toes and Heel. Dr. Ludwig Hecktoen.......... 269
Genital Irritation in Boys, by Alex. Davidson, M.D.......... 64
Gestation, Prolonged. Armstrong.......... 289
Goelet, Augustin H., M.D., New York. The Treatment of Pelvic Hæmatoma and Hæmatocle by Galvanism.......... 342-346
Goggans, James A., M.D., Alexander City, Alabama. The Surgical Treatment of Empyema with Cases.......... 118-124
Gonorrhœa, the Injection Treatment. Ex-
Gonorrhœa, Treatment by Salol (Pharmacy) 618
periment. Friedheim.......... 280
Gunpowder, a means of criminal abortion... 103
Gynæcology, the Early Diagnosis of Uterine Pregnancy, by J. C. Reeve, M.D., Dayton, O. 176
Gynæcology the Value of Electricity. W. S. Plaifair, M.D., LL.D., F.R.C.P.......... 254
Gynæcology the Use of Electricity, by Dr. A. D. Rockwell, New York.......... 290

H

Hæmaturia, cure and treatment, G. Stevens Pype, L.R.C.P. & S., Edin.......... 194
Harrison, Geo. Tucker, M.A., M.D. Podalic Version in Contracted Pelvis.......... 111
Harrison, Geo. Tucker, M.A., M.D. In Memoriam of Ch. S. Wood, M.D.......... 407
Hernia, the Cure of. Henry O. Marcy, A.M., M.D., LL.D., Boston.......... 92
Heredity in Disease. John Schilling, M.D.... 202
Howard, E. H., M.D., N. Y. Recent Lunacy Legislation in N. Y. State, Affecting the General Practitioner.......... 351-353
Hydrophobia and Pasteur's System.......... 143
Hydrotherapy, Practical Utilization of It. Simon Baruch, M.D.......... 24

I

Influenza, treatment of it.......... 315
Insanity and Hypnotism.......... 421
International Medical Congress.......... 103
Invagination of the Colon, Acute..........639

J

Joints, Tubercular Disease of. Lecture by John Croft, F.R.C.S.......... 368
Joint Diseases in Children, Post-Graduate Lecture on the Beginnings of; Joint Diseases in Children, by J. Hammond Morgan, F.R.C.S.......... 590

K

Kidneys, Some Chronic Forms of. Reginald Harrison, F.R.C.S.......... 191

L

Laparotomy for Catarrhal and Ulcerative Appendicitis.......... 75
Laparotomy for Hernia at Birth, operation ..209
Lassar's Skin Clinic, Hints on Eczema....... 95
Larynx, Intubation of. F. E. Waxham M.D., 187
Leg Crushed, Amputation of.......... 271
Leg, fracture.......... 271
Lids, Corrosive Sublimate for Granular Lids (Pharmacy).......... 618

M

Magnesia Sulphate, concentrated solution... 207
Malaria in Children. By Hiram N. Vineberg, M.D., New York.......... 155
Massage, the Utility of it in the Treatment of Diseases of some of the Abdominal Organs, by W. R. Thomas, M.D., M.R.C.P.... 587
"Olive" Oil from a New Source.......... 637
Memoriam, In—of the Death of Prof. James Lawrence Cabell, M.A., M.D., LL.D.......... 214
Memoriam, In—to Dr. Isaac E. Taylor, by Dr. John Shrady.......... 320
Menthol, the Use of. By Frank Hamilton Porter, M.D.......... 367
Methol in Acute Rhinitis, Influenza, etc..... 413
Milk, the Purification of its Supply.......... 405

PAGE

Mistakes in Prescriptions of Doctors and Druggists. By Dr. von Beverhout Thompson.......... 125
Musculo Spinal Nerve. By Wm. Perrin Nicolson, M.D.......... 20
MISCELLANEOUS:
  The Invasion of the Masseur.......... 102
  Laparotomy for Hernia at Birth—Pathology of Severe Burns—Practical Points of Surgical Dressings—The Dread of Death.......... 209-211
  Fatal Result of Suspension for Ataxy—Treatment of Enuresis Nocturna—Volvulus and its Treatment—Diagnostic Value of Peptone in the Urine—The Treatment of Influenza, etc.......... 312-316
  Hypnotism and Insanity—Physical and Mental Changes after the Removal of the Ovaries, etc.—The Conclusions of the Hyderabad Commission on Chloroform—The Urine in Pernicious Anæmia —The Ear in Criminals.......... 420-433
  An Old Prescription—New Method of Excising the Wrist—Effects of Sleep on the Gastric Juice—Excretion of Albumen in Nephritis.......... 540, 541
MEDICAL NEWS AND NOTES:
  International Medical Congress—Neuro Surgery—A Sulphonal Sleep—How to Act when Bitten by a Rattlesnake - Congenital Absence of the Uterus and its Appendages—Vaccination against Tuberculosis—The Second Congress for Tuberculosis.......... 103-106
  Electricity as a Death Penalty—Mirrors for Nervous Diseases—The Shuttle Pulse—Nitrous Oxide and Ether—An Artificial Tongue—To Restrict Quackery in Maryland—The Christ Hospital of Cincinnati—Typhus Fever in New York.......... 211-214
  A New Micrococcus—To Clear Waste Pipes—Longevity of the Jews—The Mary Washington Monument—Subcutaneous Injection of Saline for Post-Paitum Hæmorrhages.......... 316-320
  Ingrowing Toe Nails—Dangerous Fun—What Makes a Successful Physician—Billroth—A New Function of the Medulla—The Late Sir William Gull.. 433-436
  Dr C. D. Palmer—Virchow—Dr. N. Senn —Enterprising Canadians—The Size of French Families—Plaster of Paris Splints—Excision of the Patella—The Antiseptic Power of Coffee—A Dangerous Prescription—La Nouna Treatment of Snake Bites.......... 542-544

N

Nephritis, Acute, and Uræmic Convulsions. Dr. J. Walter Carr.......... 393
Neuro Surgery.......... 103
Nicolson, William Perrin, M.D., Atlanta, Ga. Two Cases of Injury of the Musculo-Spinal Nerve, in Fracture of the Humerus.......... 20
Nocturna Enuresis, Baruch.......... 313

O

Organic Diseases and Hypnotism, by W. W. Ashhurst, M.D.......... 93
Orexin Hydrochlorate.......... 531
Ovarian Hernia. S. S. Cartwright, M.D..... 416

P

Page, R. C. M., M.D., Professor of General Medicine and Diseases of the Chest, New York Polyclinic, etc.; Typhoid Fever...556-566
Patella, Fracture of the Patella, by Wm. T. Bull, M.D.......... 483
Placenta Prævia, by J. Braxton Hicks, M.D., F.R.C.P., F.R.S.......... 184
Pelvic Tumors, by Dr. A. H. Goelet, N. Y.... 290
Pelvic Hæmatoma, by Dr. A. H. Goelet, N. Y. 342
Peritonitis, Chronic, etc.......... 90
Peroxide of Hydrogen.......... 411
Pharmacopœia, Revision of.......... 304
Phthisis, the Use of Creasote, by Wm. Perry Watson, A.M., M.D.......... 77
Phthisis, the Curability, by Th. Harris, M.D. 281
Phthisis, Tannin in.......... 415
Physical and Mental Changes after Removal of the Ovaries, and Extirpation of the Uterus. Glaeveke.......... 422
Physiology, Essentials of. H. A. Hare, B.S.C., M.D. 101
Phthisis, the Milroy Lectures on the Etiology and Prevention of Phthisis, by Arthur Ransome, M.D., F.R.S.......... 596
Phthisis, Epidemic of Pulmonary Phthisis, by Dr. Marfan, Paris.......... 615
Pneumonia, Treatment of.......... 411

15797

Poison of a Serpent. Dr. S. Weir Mitchell.. 104
Poison, the Post Mortem Imbibition, by John J. Reese, M.D., Philadelphia.................. 236
Poisoning, a Case of Acetanilide-Poisoning, by S. T. Armstrong, M.D., Ph.D., New Orleans, La.................................. 621
Porro Operation, by Joseph Price, Philadelphia.................................. 68
Potassium, Iodide of.......................... 303
Pregnancy, Case of Tubal. By E. D. Ferguson, M.D., Troy, N. Y.......................... 78
Pregnancy, Diagnosis, by J. C. Reeve, M.D., Dayton, O.................................. 176
Pylorectomy.................................. 627

Q

Quinine, Administration of, to Children. Stanley M. Ward, Scranton, Pa.............. 307

R

Rabies of Dogs and Hydrophobia............ 143
Remedies, New...................... 306
Respiration, Noisy, in Children................ 55
Reviews :
  Intestinal Surgery—Wood's Medical and Surgical Monographs—Diabetes, Mellitus and Insipidus—Rectal and Anal Surgery—Education and Culture as Related to the Health and Diseases of Women—Essentials of Physiology...... 99-101
  The Surgical Treatment of Volvulus—The Evil that has been Said of Doctors—Saunders' Question Compends—Studies in Intestinal Surgery—On the Treatment of Diabetes by Free Phosphorus—The Disposal of the Dead—Concealed Pregnancy, etc.......................... 208
  Treatise on Materia Medica, etc.—Clinical Lectures on Diseases of the Abdomen—A Manual of Surgery and Bandaging—Manual of Skin Diseases—The Rheumatic Diseases—A Handbook of Obstetric Nursing—Monthly Nursing—Text Book of Medical Chemistry... 309-312
  Diagnosis of Diseases of the Brain—Wood's Medical and Surgical Monographs—Handbook of Physiology—A Handbook of Therapeutics—An Elementary Treatise on Human Anatomy Syllabus of Obstetrical Lectures—A New Medical Dictionary............ 417-421
Reviews—Abortion and its Treatment from Practical Experience. By T. Gaillard Thomas, M.D.................................. 623
Ruffin, Kirkland, M.D., Norfolk, Va. Original Abstracts :
  The Surgical Treatment of Typhlitis.... 70
  Early Laparotomy in Appendicitis....... 75
  Creasote in Diseases of Air Passages..... 77
  Placenta Prævia.......................... 184
  Larynx, Intubation of.................... 187
  Foods for Invalids and Infants........... 188
  Aneurism of Aorta........................ 274
  Stricture, One hundred and twenty cases of......... 277
  Acute Gonorrhœa, Injection treatment.. 280
  Phthisis, Curability of.................. 281
  Frequent Association Between Diseases of Heart and Pelvic Viscera........... 283
  Chloralamide as a Hypnotic.............. 284
  Tuberculosis in Dairy Cattle......... ... 285
  Corporeal Endometritis.................. 359
  Therapeutics of Typhoid Fever.......... 363
  The Use of Menthol...................... 367
  Experiments on Anæsthetics............. 480
  Fracture of the Patella.................. 483
  Analgesic Action of Methylacetanilide or Exalgine.............................. 485
  Deaths from Chloroform in Young Children.................................. 486
  Bone Drilling............................ 487
Hypnotism as an Anæsthetic..............566-568
Laparatomy, the Ultimate Results of it for the Removal of Diseased Appendages.... 569
Pneumonia, Notes on the Infectious Nature of Acute Lobar Pneumonia......... 568
Phthisis, the Question of Operations upon Fistula in Phthisis......................... 571
Binder, the Effect of the Binder upon Chest and Abdomen.............................. 574

S

Sanitary : Disposal of House Refuse, by Alfred Ludlow Carroll, M.D., New York....... 606
Sanitary Condition of Italy.................... 97
Sanitary, the State Board of Health, N. Y... 534
Scarlatina, Renal Disease of. W. M. Welch, M.D., Phil.................................. 243
Seborrhœa. George Thomas Jackson, M.D., N. Y.................................. 441
Section, Cæsarian the Saenger Method, by H. H. Vinke, St. Charles, Mo.............. 286
Shunk, Albert, M.D. Hypertrophy of Turbinated Bones with Reflex Phenomena. 230-233
Seltzer, Tarrant's.............................. 95
Sex, the Physiological, Pathological and Psychological Bearings of Sex. S. S. Wallian, A.M., M.D., New York.......................... 469
Simplicity the Seal of Truth.................. 635
Sulphonal Sleep, an Episode.................. 104
Sunflower Seed in Malaria.................... 411
Shoulders, Dislocation of Both. Sir Joseph Lister Bart, F.R.S.......................... 510
Sterility of Women, by James Oliver, M.D.. F.R.S.................................. 575
Stricture, Internal Urethrotomy.............. 277
Surgery. Address by Phineas S. Conner, M.D., Cincinnati, O.......................... 82
Surgery, Intestinal. N. Senn, M.D., Ph. D.. 99
Surgery, Rectal and Anal, Second Edition. Edmund Andrews, M.D., Chicago, Ill...... 101
Suture, Anlmal, in Cure of Hernia, by Henry O. Marcy, A.M., M.D., L.L.D., Boston..... 92
Synovial Tuberculosis of Sacro-Iliac Joint, Pelvic Abscess, Operation by Dr. Hecktoen, Chicago.................................. 270
Syphilis, Imitating Lupus. By R. Norris Wolfender, M.D., Cantab.......................... 80
Syphilis, Transmission of. By L. Merz...... 355
Syphilis, Treatment of Hereditary—Pharmacy.................................. 621

T

Tænicides.................................. 301
Tannin Treatment of Phthisis................ 415
Thompson von Beverhout, Dr. Doctors' Prescriptions and Druggists' Mistakes..... 125-133
Tonsillitis, Treatment (Pharmacy)........... 620
Tracheotomy for Foreign Body. Murdoch.. 518
Traumetic Section of Both Tendons Achillis. 522
Tuberculosis of Knee Joint, etc. Ludwig Hecktoen, Chicago................ 269, 270, 271
Tuberculosis Pulmonary, the Curability of, by Thomas Harris, M.D., London............... 281
Tuberculosis and Dairy Cattle. E. F. Brush, M.D.................................. 284
Tuberculosis Among Nurses, a Study. By
Tubes, Fluid Accumulations in Fallopian Tubes, by Graily Hewitt, M.D., F.R.C.P.... 594
Geo. Cornet, M.D.......................... 404
Tumor of the Pancreas. By Waldo Briggs, M.D.................................. 401
Turbinated Bones, Hypertrophy of. By Albert Shunk, M.D.......................... 230
Typhlitis, the Surgical Treatment of. By Frederick Treves, F.R.C.S................... 70
Typhoid Fever, Discussion of the Therapeutics of. By F. P. Kinnicutt, M.D........... 363
Typhoid Fever, by R. C. M. Page, M.D.... 556-566

U

Ulcers, or Sores, a Clinical Lecture. By Pickney French, M.D., St. Louis................. 262
Urethrotomy, Internal, a Discussion......... 277
Urine in Pernicious Anæmia. Conclusions of Dr. William Hunter......................... 430
Uterine Fibromata, the Electrical Treatment of. By Dr. George Apostoli, Paris.......... 260
Uterine Fibromata, the Galvanic Treatment of. By Dr. E. L. H. McGinnis, N. Y......... 290
Uterus, Inflammatory Diseases of the. By Francis Imlach, M.D........................ 376
Uterus, the Indications for Operation in Diseases of the. By E. H. Grandin, M.D...... 387
Uterus, a Case of Congenital Absence of the. Report by Dr. Louis A. Bryan, Houston, Texas.................................. 105

V

Vaccination Against Tuberculosis. A Note Read by M. Darenberg of Mentone......... 105
Valk, Dr., New York. Eye Strain ; its Causes and Symptoms. Read before the N. Y. County Medical Society 547-556
Vander Veer, A., M.D. Report of Cases of Supra-Pubic Cystotomy with Remarks. 342-346
Volvulus and its Treatment............. 314

W

Wallian, Samuel S., A.M., M.D., New York. The Physiological, Pathological and Psychological Bearings of Sex.............. 469-480
Ward, S. M., M.D. Quinine in Diseases of Children.................................. 307
Water Cure or Hydrotherary, Practical Utilization. By Simon Baruch, M.D........... 24
Water of the Greenbrier White Sulphur Springs, W. Va. By Wm. C. Dabney, M.D. 331
Whooping Cough, a New Method of Treatment, by Dr. Concetti...................... 204
Wood, In Memoriam of Charles S. Wood. By George Tucker Harrison, M.A., M.D....... 407
Wounds, Healing of, without Drainage. By Dr. Ludwig Hecktoen, Chicago............ 268

Y

Yellow Fever, Mortality Statistics........... 406

GAILLARD'S MEDICAL JOURNAL.

VOL. L. NEW YORK, JANUARY, 1890. NO. 1.

CONTENTS.

ORIGINAL ARTICLES. PAGE.

Remarks on Certain Obscure and Minor Forms of Pelvic Cellulitis Simulating Malarial Fever. By Bedford Brown, M.D., Alexandria, Va.......... 1
Puerperal Eclampsia. By John Herbert Claiborne, M.A., M.D., etc.......... 12
Two Cases of Injury of the Musculo-Spiral Nerve, in Fracture of the Humerus. By William Perrin Nicolson, M.D., Atlanta, Ga.......... 20
A Plea for the Practical Utilization of Hydrotherapy. By Simon Baruch, M.D.......... 24

SELECTIONS.

Noisy Respiration in Children—Genital Irritation in Boys—The Porro Operation.......... 55–70

ORIGINAL ABSTRACTS. By Dr. Kirkland Ruffin.

The Surgical Treatment of Typhlitis—A Plea in favor of Early Laparotomy for Catarrhal and Ulcerative Appendicitis—The Value of Creasote in Fifty Cases of Disease of the Air Passages.......... 70–78

CLINICAL RECORDS.

A Case of Tubal Pregnancy—Note on a Case of Syphilis Imitating Lupus.......... 78–81

ADDRESSES.

Address on Surgery.......... 82–89

PROCEEDINGS OF SOCIETIES.

Enteralgia and Chronic Peritonitis—The Cure of Hernia By the Use of the Buried Animal Sutures—Hypnotic Suggestion in the Treatment of Organic Disease.......... 90–94

PHARMACY AND THERAPEUTICS.

Tarrant's Seltzer—Absinthe—Treatment of Eczema—A Dental Anæsthetic.......... 95–97

SANITARY.

Sanitary condition of Italy.......... 97

REVIEWS.

Intestinal Surgery—Wood's Medical and Surgical Monographs—Diabetes, Mellitus and Insipidus—Rectal and Anal Surgery—Education and Culture as Related to the Health and Diseases of Women—Essentials of Physiology.......... 99–101

MISCELLANEOUS.

The Invasion of the Masseur.......... 102

MEDICAL NEWS AND NOTES.

International Medical Congress—Gunpowder as a Means of Criminal Abortion—Neuro-Surgery—A Good, Long Sulphonal Sleep, and no harm done from the Large Dose—How to act when Bitten by a Rattlesnake—Congenital Absence of the Uterus and its Appendages—Vaccinnation Against Tuberculosis—The Second Congress for Tuberculosis.......... 103–106

EDITORIALS.

"Taking Stock" by Physicians—Nous Nous Sontenons—The Grand Meeting of the Southern Surgical and Gynæcological Society—The Russian Grip—Retirement of Dr. J. Herbert Claiborne, Jr.—Our Original Abstract Department—Death of Dr. James Hutchinson—A Happy New Year to our Readers.......... 106–110

ORIGINAL ARTICLES.

ARTICLE I.

REMARKS ON CERTAIN OBSCURE AND MINOR FORMS OF PELVIC CELLULITIS SIMULATING MALARIAL FEVER.*

By BEDFORD BROWN, M.D., of Alexandria, Va.

Ex-President of Medical Society of Virginia, Member of Med. Examining Board of Virginia, and Member of Southern Surgical and Gynæcological Association.

Mr. President :

I respectfully ask permission to submit some remarks on certain obscure types and also minor forms of pelvic cellulitis, which in general feature simulate malarial fever, and are not infrequently mistaken for that affection. In recurring to my note-books, I can find some twelve cases of pelvic cellulitis, some of a grave, and others of a minor form, but all so very obscure in their manifestation of the presence of local lesion as to be well calculated to mislead and to cause a mistaken diagnosis to be made of malarial fever.

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* Read before the Southern Surgical and Gynæcological Association at Nashville, Tenn., Nov. 14, 1889.

There was nothing in these cases to call the attention to the pelvic organs.

I have in a number of instances seen these cases run their course from beginning to end without manifesting the first general symptom of local disease in the pelvis. So that the general resemblance to malarial fever was very nearly complete.

I am also sure from cases which I have seen in the practice of others of mistaken diagnosis, that it is not an unusual occurrence for cases of obscure pelvic cellulitis to run their entire course without ever having been recognized as such. There are minor forms also of pelvic cellulitis not infrequently coming under our observation, obscure and thoroughly disguised in their local symptoms, but always attended with fever, generally slight, but always remittent in type. In the class of cases under consideration, so far as the pelvis is concerned, there is a negative state of things rather than otherwise. There is invariably no pelvic pain. The patient complains of no pain or discomfort in the abdomen or region of the pelvis or pelvic organs, as the uterus, bladder or rectum. There is no peritoneal pain or tenderness on pressure. There is no deposition of lymph or effusion of serum under the peritoneum, above the broad ligaments. In truth, so far as the sensations of the patient are concerned, there is nothing in these cases to direct your attention to the local affection.

Yet local disease of a serious character exists, and is the true cause of all the trouble. But while in these cases there is a complete absence of all general symptoms leading to a diagnosis of local disease, on making a careful examination per vaginam and per rectum you will find an indurated point in some portion of the cellular tissue of the pelvis, either on the right or left side of the uterus, or cul de sac in the form of a circumscribed prominence. It may not be larger than a small walnut, and feels hard and is tender to the touch on pressure, but is not overly sensitive usually. In these examples of circumscribed effusion the uterus is generally easily moveable. At other times we find the lymphous effusion much more diffuse and extensive, with fixation of the uterus, occasionally involving the entire cellular tissue of the pelvis without giving warning of its presence.

And, nevertheless, while the points of effusion are tender to the touch through the walls of the vagina, the patient has never complained of pain or discomfort in the pelvis. Now I am satisfied that it requires only a very limited inflammation of the pelvic cellular tissue to create and maintain a protracted symptomatic fever. I have seen cases of circumscribed inflammation of this cellular tissue with lymph effusion producing an indurated point not larger than a hen's egg, maintain a symptomatic fever for two months without ever causing the slightest pain in that region.

I have in numerous instances of this kind seen the type of fever assume that of septicæmia, accompanied with rigors, fevers and perspiration, and then terminate without suppuration. The class of cases which I wish to describe here as the minor form of cellulitis, constitute those cases in which the local lesion is very limited, is devoid of all pain, and there is no tenderness on pressure over the abdomen. The preliminary rigor is very slight and often absent. The febrile reaction, though obstinate and somewhat protracted, is never high and is always of the remittent type.

The rise of temperature rarely exceeds 101° in the morning, and 102° in the evening, and almost invariably terminates in health. I have not infrequently seen these cases pursue a course of two or three weeks.

They never manifest indications of septicæmia. In this class of cases when the finger is inserted in the vagina, and made slowly and continuously to sweep around the roof of the vagina firmly, there will always be found a tender point that is indurated, however small, somewhere in the circle. Now, if the index finger is pressed firmly upon this point, while the index finger of the other hand is pressed equally firmly over the brim of the pelvis, outside and above the broad ligament, the extent of this cellular inflammation and induration can be very accurately measured and defined. In certain instances it is so well defined that it resembles to the touch the sensation of a round ball imbedded in the cellular tissue. In those protracted cases without suppuration there is often a singular and peculiar series of changes of a pathological character which maintain constitutional infection. Thus there will be circumscribed engorgement and inflammation, with deposits of lymph and then effusion of serum around the lymph deposit, accompanied with a remitting form of fever which, it may be, will continue for many days. Then there will ensue a decline of the fever, and possibly a subsidence.

Just at this stage it will be observed that the lymph deposit and serous effusion are undergoing absorption and may finally almost disappear. But in two or three days there is a recurrence of chill and fever and constitutional depression, with all the indications of a new infection and a renewal of the inflammation and lymph deposit.

This train of symptoms may continue for two or three weeks and again subside. I have seen this series of changes in a single protracted case recur six or eight times before final recovery. Why some cases of uncomplicated cellulitis should be accompanied with pain and others not, there appears no method of determining. The most prominent features are increased temperature and pulse rate. I have rarely seen the temperature in uncomplicated cellulitis exceed 105°, and the pulse rate 125, except from pyæmic infection.

In my experience in cases where the peritoneum is not involved, a temperature of 106°, and a pulse of 130 denote purulent infection.

As previously remarked in this class of cases of which I speak the fever is essentially remittent in type. The temperature may go up to 104° at night but decline towards morning to 100° or 101°. These diurnal variations may continue for weeks and even for months. In one case under my charge there was remittent fever every day for six months previous to the subsidence of inflammation and absorption of lymph. I have also seen these cases assume many of the general features of so-called typho-malarial fever. There was the quick pulse, dry tongue, some degree of tympanitis, dry skin, remitting form of fever, occasional nocturnal delirium, no pain in the pelvis or abdomen or any complaint of pain in these regions, jaundiced complexion and general prostration. The patient lies in a listless, languid condition, perfectly indifferent to life and all surrounding circumstances.

On the contrary, in the types of lesser severity or minor forms the pulse-rate is usually increased out of proportion to the degree of temperature. For instance, the pulse rate will often rise to 120 when the temperature does not go beyond 102°. In these protracted cases if there is no actual septicæmia existing, there is a steady and progressive blood depreciation. There is often a train of symptoms developed, consisting of chills, fevers and perspirations resembling pyæmia when really there is no suppuration. In this condition the general prostration is extreme. There is usually complete anorexia, nausea and vomiting, and the complexion, assuming a genuine icteric hue, is well calculated to direct our attention to the liver and divert the mind from the true cause of the trouble.

It is a matter of infinite importance to distinguish these obscure cases from malarial fever. I am satisfied from my own experience and that of others, that the two diseases have not unfrequently been confounded. There is only one certain method of distinguishing obscure and doubtful cases of cellulitis from malarial fever, or typho-malarial fever, and that is the presence of inflammation, lymph deposit and serous effusion in the pelvic cellular tissue as revealed by vaginal exploration. In a certain proportion of these minor cases, the local inflammation is so limited in its area, so circumscribed, that it requires much care and patience in our examination to detect its presence. It may be found in the form of an indurated lump of fibrinous deposit, just under one or the other broad ligaments, closely adherent to them, in the cul-de-sac, or closely attached to one side of the uterus. And though it may give rise to no perceptible pain whatever, firm pressure through the vagina on the part will always elicit the characteristic *ache* and tenderness. In some of these cases the fever is unaccompanied with chill and is very slow and insiduous in its development. For the first few days there will only be a slight quickening of the pulse every evening and a rise of a single degree of temperature. But there is a daily increase in the frequency of the pulse and in the rise of temperature until the symptoms assume a serious form. Tympanitis in more or less degree is usually present. There is also present frequently a dry tongue and a diarrhœa that is persistent and troublesome. These cases are not unfrequently accompanied with mild delirium at night, thus rendering the resemblance to the advanced stages of malarial or typhoid fever very decided in their general aspect. But there is always wanting the rose-colored eruption of the latter disease. In all cases of fever after labor or abortion within the month whether pain in the pelvis and abdomen is present or not, or whether there is tenderness on pressure over the hypogastric or pubic regions, or whether there is uneasiness, or unpleasant sensations of any kind in the pelvic organs, I adopt it as a standard rule that the interior of the pelvis is to be explored carefully and thoroughly until the local disease is detected.

There is a form of pelvic cellulitis that results from abortion and arises from the presence in the uterus of a small portion of adherent placenta. Adherent placenta in cases of abortion is by no means an unusual occurrence and is a common cause of para and peri-metritis. It affords a septic material when absorbed that finds its way into the peri-uterine veins and lymphatics which causes inflammation and the effusion of lymph—nature's barrier erected for the purpose of arresting the further absorption into the general circulation. The dose o septic matter is thus isolated and at least for a time debarred entrance into the circulation; and while in this way it is prevented from inducing fatal septicæmia, it is sufficient to establish local inflammation and a remitting, symptomatic fever that continues until the septic cause is eliminated.

These cases are always obscure and are usually attended with no pain or tenderness over the abdomen or in the pelvis. There is no peritonitis, but a careful examination will reveal a local inflammation and a lymph effusion at some point in the cellular tissue that is the cause of the fever.

I am impressed with the conviction, based upon a very considerable experience in the observation of these cases, that a large majority of the so-called cases of puerperal malarial fever are in reality examples of obscure forms of pelvic cellulitis.

For a time, in my early experience, I occasionally confounded these cases myself with malarial fever. I have also seen the same mistakes made in the practice of others.

Puerperal inflammation in the pelvic organs is peculiarly a disease of towns and cities. It occurs more particularly among dense collections of human beings. It is rare among a sparse population. The accumulation of vegetable, animal and excrementitial matters collected from the close contiguity of human life, produce an atmospheric sepsis whether in the form of bacterial, animal or chemical poison, that is liable to infect the human system in a manner that we do not see in the salubrious districts of the country. During a practice of ten years in a country district, a large proportion of which was obstetrical, I saw but one case of puerperal fever, and not a single case of pelvic cellulitis, though there was never any attempt at antisepsis or sanitary hygiene in midwifery. Previous to the introduction of antisepsis in city practice I saw cases every year and frequently a number of them. Since that time, if I take antiseptic precautions, I never have a case of either. Thus reverting back in practical result to a condition resembling the salubrity of healthy country life. We know that, as far as the puerperal female is concerned, they are both equally liable to lacerations of the genital tract and to putrefaction of the lochia and to the absorption of this putrescent matter.

We know, as a rule also, that the city woman gives more attention to cleanliness during confinement because more properly nursed. We know also that most country women during the puerperal state have a superstitious dread of the local use of water. Yet so-called epidemics of puerperal fever or septicæmia are unheard of in country life, and sporadic cases only at rare intervals. This is equally true of pelvic cellulitis and peritonitis.

In the great majority of cases of cellulitis after labor coming under my observation, there has been laceration or fissure somewhere in the genital tract through which septic matter has entered the circulation. In city life, if a rent occurs during labor, either in the os uteri, cervical canal or perineum, however small, there is danger of septic infection. In country practice, females while in labor are equally liable to lacerations, yet septicæmia or infection is extremely rare. There is something in the atmosphere of towns and cities peculiarly favorable to the generation of septic material in the puerperal uterus as in the case of wounds.

On the contrary, the healthy air and surroundings of rural districts is peculiarly unfavorable to its development. Hence the line of practice in obstetrics is entirely different in the two spheres of life relative to hygienic and antiseptic methods, and very justly so. In illustration of the views advanced in this paper, I propose to present in detail the histories of some four or five cases of obscure and minor forms of pelvic cellulitis simulating malarial fever.

Case I.—Mrs. S., a young married lady of comparatively good constitution, was confined with her third child.

For ten days following, the case progressed favorably in every particular. Then she had a slight chilliness, suceeeded by fever. The fever continued to recur daily, with distinct morning remissions. But daily the pulse increased in frequency and the temperature at night rose higher, until the former reached 125 and the latter 105°. In this case there was no abdominal or pelvic pain or tenderness on pressure whatever.

The patient could bear, when seen by me, decided pressure in every direction over the abdominal regions without the slightest pain.

There was no indication in this case to direct the attention of the attending physician to the pelvis, and as the season manifested decided tendencies to the prevalence of malarial diseases, it was regarded as of that character. The daily remissions in the morning and nocturnal exacerbations of fever were remarkable. The temperature would rise to 104° or 105° at night, and decline to 100° in the morning, with a copious perspiration. There were also severe neuralgic pains in the head and limbs, invariably when the evening exacerbation came on, which would disappear when the remissions returned. The tongue was densely coated and inclined to be dry. There was progressive loss of strength and flesh, accompanied with extreme mental depression and loss of interest in surrounding objects. There was no irritation of the uterus, bladder, or rectum, but there existed a moderate tympanitis. Nor was there the least uneasy sensation in the pelvic organs. I am thus minute and particular in describing the symptoms in this case to show the very marked and close resemblance to malarial fever.

Indeed, her physician regarded it as a well-marked case of typho-malarial fever. But he had never explored the interior of the pelvis. I know no case better calculated to deceive or mislead than this. To make the resemblance still more complete, about the fourth week the complexion assumed a genuine jaundiced hue. But the urine did not indicate the presence of bile. I find in a considerable proportion of these cases resembling typhoid or adynamic malarial fever the complexion assumes this peculiar icteric hue. I have seen similar instances in the practice of others.

I have never observed it in any other than the grave forms of the disease. It is to be distinguished from the jaundice of malaria by the absence of bile from the urine and also by its absence from the conjunctiva. When this case came under my observation I found a woman in an emaciated and prostrated condition, with a pulse of 125, loss of appetite and nausea, with occasional vomiting, jaundiced complexion and remittent form of fever, chills once or twice daily, copious nocturnal perspirations and some degree of tympanitis. Exploration of the interior of the pelvis disclosed decided tenderness on pressure around the uterus, and extensive lymph deposits throughout the entire cellular tissue. Notwithstanding the presence of this extensive local disease, which had existed for six weeks, the patient had never complained of pain in the abdomen or pelvis, or any other symptom to direct the attention to the pelvis.

In this case, while no suppuration could be detected and none ever occurred, there were manifestly general indications of pyæmia in the form of daily rigors, fevers and perspirations. Because of the presence of these symptoms, I have been misled in other cases into the belief that suppuration existed when it did not. This patient was subsequently treated by means of twenty grains of quinine in ten-grain doses morning and night. The one-sixtieth of a grain of atropia at night for the exhausting perspirations, and the sixteenth of a grain of the mild chloride of mercury every three hours, and as much concentrated nutriment as the stomach could digest and antiseptic douches. Under this method of treatment the lymph deposits in the pelvis gradually melted down and dissolved, and the blood formation and nutrition improved, while the febrile symptoms disappeared, and eventually the patient convalesced favorably.

Case II.—Mrs. W., æt. 26 years, a married woman, eight days after a labor with her first child that was natural, had some chilliness followed by fever. The lacteal secretion and lochial discharge were both of a healthy character. The fever continued to recur daily, and soon assumed the type of a genuine remittent, with morning remissions and evening exacerbations. The patient complained of no pain or discomfort in the abdomen or pelvis.

Nor was there the least tenderness on pressure. But the symptoms did not yield to anti-malarial treatment, as they were supposed to be due to malarial causes.

The fever still continued to observe the remittent type. An examination per vaginam revealed an inflamed area in the cellular tissue on the right side of the uterus, and a firm indurated deposit of lymph about the size of a common walnut, that was tender to the touch. On the same side, in the os uteri, there was a small fissure. The presence of this wound explained the prime cause, the local inflammatory process resulting and the symptomatic fever.

In this case the treatment consisted of twenty grains of quinine per diem, antiseptic douches, and one-sixteenth of a grain of calomel every three hours. Under this treatment the inflammation and fever rapidly subsided, and the patient was convalescent in about three weeks.

The small laceration was healed perfectly by applications of a solution of nitrate of silver containing ʒss of the silver to ℥i of water. This woman has borne two children since.

Case III.—Mrs. F., a married woman, after labor with her fourth child which was natural, had a chill, followed by fever, on the tenth day of confinement. The lochia continued in a normal condition, and the secretion of milk was fully established. There was no pain either in the pelvic organs or abdomen, and no tympanitis or tenderness over the abdomen on pressure. There was no indication whatever pointing to disease within the pelvis.

The woman resided in a malarial district and was confined during the malarial season. The fever was strictly of a remittent type and pursued its usual course, and was at first attributed to this cause. But regardless of anti-malarial treatment, the fever continued without abatement. Finally a thorough exploration of the organs of the pelvis revealed a somewhat extensive cellulitis and lymph deposit.

Minute doses of mercury and vaginal douches restored this patient completely in about five weeks. The history of these cases disclose the fact that they all had a positive type of remittent fever, which was due to local inflammatory action alone.

Case IV.—Mrs. P., a married woman, æt. 27 years, of robust constitution, some two weeks after an accidental abortion during her first pregnancy in the third month, had a sudden and decided chill, followed by fever. Subsequently she had a chill and fever every day, accompanied with intense pain in the head and lower limbs, but no pain or discomfort either in the abdomen or pelvis.

The tongue was thickly coated and there was nausea, loss of appetite and constipation. The resemblance to malarial fever was complete in every particular. The chill, fevers and headache appeared at regular hours every day followed by a remission every morning that amounted almost to a complete intermission.

I have never seen a case of cellulitis in which the deception was more perfect than this. The evening temperature would usually reach 103½, and that in the morning would stand at 99½. The anti-malarial remedies were lavishly used in this case without avail. The complexion of the patient now became decidedly jaundiced. But there was an absence of bile in the urine. This induced me to suspect that there were other causes than malaria in this case. A vaginal examination disclosed a very extensive pelvic cellulitis. The entire pelvis was literally filled with lymph exudations.

Yet all of this vast extent of local disease had never by any indicacation revealed its presence. The sixteenth of a grain of the mild chloride of mercury combined with two grains of the oxalate of cerium every three hours until gentle salivation ensued and hot water douches restored this case after an illness of nearly two months. But previous to the administration of the mercury various methods of treatment had been adopted and failed. The sulphate of quinine in large doses, iodide of potassium, repeated counter irritations had all been faithfully tried without benefit. The minute doses of mercury and cerium controlled the vomiting promptly and within a week, under their influence, the chills and fever had subsided and the absorption of the extensive lymph effusion had begun and was accomplished in a reasonable time. It will be seen that in all the cases reported, the alterative action of mercury was resorted to before resolution was established.

I have of late years in all this class of cases, except the very mildest, used mercury as an alterative and with benefit. In connection with the sulphate of quinine in these attacks I believe it to be the most potent agent in our possession to subdue obstinate and protracted inflammation, to cause absorption of its peculiar products effused, and to prevent suppuration, if not contra-indicated by some special indications. In cases in which abscess has been developed and discharged with symptoms of pyæmia, the bichloride in combination with the tinc. of the chloride of iron and hydrochloric acid are best adapted. But in these cases of obstinate, indolent, indurated deposits in the cellular tissue, minute doses of calomel introduced gradually, effect their absorption more effectually and subdue the inflammation more certainly than any other preparation.

Case V.—Mrs. B. a married woman æt. 21 years, with her first child, had on the fifth day after labor a very slight chill followed by a mild form of remittent fever; the temperature rose in the evening to 101½° and declined in the morning to 99°. This type of fever continued for two days and then subsided. The patient complained of no pelvic or abdominal pain whatever. Neither did firm pressure over the abdomen elicit tenderness.

On examination there was found a very limited fissure on the right side of the os uteri and on the corresponding side at the utero-vaginal junction, there was a small inflamed indurated point of effusion in the cellular tissue closely attached to the uterus not larger than the ball of the thumb. Here was the centre of constitutional infection. In all of its general features this case was identical in appearance with a mild type of malarial fever. It is an example of the minor form of the disease which is comparatively harmless and which has frequently come under my observation in past years. They usually pursue a mild course and terminate in health in ten or fifteen days.

This case was treated principally by means of the sulphate of quinine, iodide of potassium, and hot water douches. These minor cases of cellulitis rarely manifest any indications of local lesion and always observe the character and usual course of mild remittents. They also very rarely tend to suppurations or extension to the peritoneum and generally tend to spontaneous recovery. The slight laceration in this case was treated by applications of a solution of nitrate of silver, as mentioned in a former case, sucessfully.

ARTICLE II.

PUERPERAL ECLAMPSIA.

BY JOHN HERBERT CLAIBORNE, M.A., M.D., etc.

Puerperal eclampsia involves that peculiar variety of convulsions, seen only in the puerperal state. They may take place at any time during the period of utero-gestation, but occur oftener during the latter months of pregnancy; most often during the process of labor; sometimes after its completion.

They have been fancifully classified by some writers in three forms: the hysterical, the epileptic, and the apoplectic, upon certain grounds which I cannot regard as tenable.

It is true that epilepsy may occur in any parturient woman, and at any time during the parturient state. And it is equally true that hysteria not unfrequently accompanies that condition of nervous exaltation and irritation common to the period of pregnancy.

Nor is there any reason why a woman *enceinte* may not be siezed with an apoplectic fit at her work or sleep or in labor, or at any other time.

But eclampsia gravidarum is a disease *sui generis*—a disease with its own symptomatology, its own etiology, and its own obscure and uncertain pathology.

Epilepsy, whilst it sometimes gives warning by a kind of an aura which an intelligent patient will recognize as premonitory and precursor of an instant attack, yet, as a rule, seizes its victim of either sex, at any time and at all seasons.

But eclampsia occurs only in the female—and only in the parturient female—and, as its synonym in the Greek signifies "flashes its light" in the patient's eyes, for hours, may be for days, before the outburst of the storm—a signal which she does not understand, but one which brings clear, marked and definite information to the accoucheur who may be on the outlook.

A persistent headache in the gravid woman, especially if it occur during the latter months of pregnancy, or at the inception of labor, tinnitus aurium, amblyopia, flashes of light alternating with partial blindness, numbness of the hands, imperfect memory, and especially if these symptoms be followed or accompanied with œdema of the face, scanty secretion from the kidneys, or the presence of albumen in the urine, indicate as clearly, as certain signs in the heavens betoken the tempest, the coming on of that most fearful and most dreaded of all the complications of the puerperal state—puerperal convulsions. It is true that the first convulsion simulates an attack of epilepsy very strikingly. But apart from that peculiar cry of the epileptic, which often inaugurates the attack, and which I have never heard in puerperal eclampsia, the convulsion itself presents to the eye of the observer certain characteristics not seen in the case of the ordinary epileptic.

When the eclampsia is immediately announced in the puerperal woman, the spasm for twenty seconds perhaps, or more, is of a tonic or tetanic character, as evinced by the fixed eye, the contracted pupil, the drawing of the orbicularis oris, causing the simulation of a smile, the tension of the cervical muscles, bringing backward the head, the swelling of the jugulars, the suspension of respiration. After this there is a sudden and complete relaxation, a long stertorous or hissing inspiration, and clonic convulsions of the whole muscular system ensue, especially violent in the face and upper extremities. This may continue for a minute or two, rarely longer at first attack, when the convulsive movements suddenly cease, and the patient falls into a deep sleep, for a day or an hour, or greater or less time, according to the intensity of the cause, the susceptibility of the subject, or the efficacy of the treatment, after which the same phenomena may be repeated.

If convulsions occur before full term and are unprovoked by uterine and recurrent pains, a day, perhaps many days, may elapse before another attack; and I have seen instances in which there was no repetition of the disease, even when labor supervened. Usually, however, there are from one to twenty attacks during twenty-four hours, unless labor is sooner ended. Some authors report as many as seventy a day, and one writer (Depaul) as many as one hundred and sixty, that is one about every eight minutes. I have seen one case in which they were almost continuous for twenty-four hours, or rather, in which, after the first six or eight regular convulsions, the muscular clonic spasms of the whole body were continuous—more nearly resembling a case of exaggerated chorea, with unconsciousness—and so constant and so powerful were they, that I saw two physicians fail, after a half hour's trial, to hold the patient still enough to get her under the influence of chloroform. Indeed it was impossible to hold her at all, except at the risk of breaking her neck. For the same reason we could neither effect delivery by forceps or by turning, and had simply to lay down our arms and confess to defeat. The most wonderful part of the story is, that the baby was eventually born, without hurt, after this long and tumultuous labor, and that the mother made a good recovery except of her vision--she was blind for several days before labor set in and for several weeks subsequently. There was no sort of venal deficiency in this case, but rather an excess in the quantity of urine, though it was loaded with albumen and casts. These gradually disappeared under treatment, and at the end of six months, she could see well enough to go about and attend to her domestic duties. I took her, at that time, to a specialist of repute in a neighboring city, and asked an examination of her eyes for glasses. He at once recognized the changes on the retinal field, and without any knowledge of the history of her case, pronouced it one of Bright's disease, undoubtedly a correct diagnosis. She is alive, however, now, at the end of four years, is well, and has vision sufficient to read coarse print, and to do her own sewing.

After the history of such a case, I cannot accept the prognosis of Dr. Lusk, which he formulates from the reports of the New York Board of Health, from 1867 to 1875, viz., one death in every eight cases of puerperal eclampsia.

The prognosis, in all cases, is certainly very grave, but the average mortality, I think, has been exaggerated. I am sure it has not been so high as that in my own cases.

The disease is one fearful to look upon, and one which excites our liveliest apprehensions, not only of present danger, but of future evil; yet, after the most violent and persistent convulsions, the woman often falls to sleep as soon as labor is terminated, and will sleep two days if undisturbed, when she will awaken, a little sore and shaken up, with no serious results following, and will enter at once the road to rapid convalescence.

Puerperal eclampsia is rated as a rare disease by most of writers—the percentage of cases being about one to every five hundred labors. Here, too, my experience differs from that of recorded authority. In my own cases there has been nearly one in three hundred.

I have referred to the uncertain and obscure pathology of the disease. I think I have not stated this condition of uncertainty too strongly. We can state, perhaps, with some degree of assurance, that there is generally some renal deficiency in the majority of cases of eclampsia gravidarum, an insufficiency often associated with the presence of albumen in the urine. Dr. Lever, as far back as in 1842, in Guy's Hospital Reports, called attention to this fact. Soon after, it was noted by a number of observers, and Frerichs in 1851, and Brown, five years later, accumulated such an amount of supposed evidence, to the same effect, that medical men began to believe that the eclampsia was little else than uræmic intoxication. Subsequent observers, however, and, notably, Seyfert, with most extraordinary opportunity for investigation in the great Maternity Hospital at Prague, reported a number of cases disproving this heretofore accepted theory. Seyfert, alone, reported seventy cases of parturient women suffering with nephritis and only two cases of eclampsia amongst them.

Then followed the theory of a ferment in the blood, converting urea into carbonate of ammonia—Frerichs still in the lead—then the Traübe-Rosenstein theory of hydræmia in all pregnant women—taken up by Andral and subsequently disputed by Löhlein, who failed to find in nineteen examinations of the cadaver but one case of œdema or anæmia of the brain.

Of course, it has been long known that convulsions will ensue on conditions of extreme anæmia of the brain. This has been observed in the cases of animals and of soldiers dying of hæmorrhage, and has been made the subject of demonstration by Brown-Sequard many years ago. But, if the subjects of puerperal convulsions, with very few exceptions, ever exhibit any evidence of anæmia during life or after death, the observations of other medical men have been widely diversant from my own. Indeed, for what class of patients do we fear this terrible complication in our obstetrical cases? Do we apprehend such danger for the pale, the enfeebled, the anæmic? Or for the robust, the plethoric, the red blooded, the full of habit? What class of patients, here in this country at least, in the experience of all people, learned, and unlearned, professional and unprofessional, are usually the subjects of convulsions during labor? Who fear it for themselves? And for whom do careful and loving friends fear it? Truly there are some questions which common sense can answer as correctly as science.

And yet another theory has been advanced in reference to the etiology of eclampsia, viz., that the pressure of the gravid uterus upon the kidneys, and the obstruction to the renal circulation thus occurring, brings about the result of deficiency in the secretion from these organs and the consequent accumulation of urea in the blood. But if pressure of the gravid womb be capable of producing such serious results, why should not the pressure of an ovarian or other abdominal tumor produce similar results? Has any such case been recorded?

And yet another theory has been published, viz., that eclampsia and albuminuria are both the effect of the same cause and that one is not the sequence of the other, that both are due to the circulation in the blood of a certain insiduous and toxic element, not yet determined—referring, I presume, to the *microbe* of *eclampsia*. This, however, has not yet been captured or cultivated, according to the latest reports on bacteriology to which I have had access.

To me, the most plausible explanation of the relationship between albuminuria and the condition of pregnancy, for that there is some such relationship in the majority of cases we must all admit, lies in the fact demonstrated, I believe, by Frankenheuser, of the direct connection between the ganglia of the kidney and the nerve filaments of the uterus, by the means of the sympathetic system.

In searching the brain or spinal marrow with microscopic lens, as if for ocular proof of organic cause of every deviation from normal function, the modern physician seems in danger of ignoring all eccentric irritation as *casus mali*. In eclampsia infantum how seldom is the seat of the trouble in the nervous centres? How often elsewhere? In a tooth, for instance, in process of eruption—in the stomach—in the colon!

And so of puerperal eclampsia, we seem to forget that it occurs only in the parturient woman, oftener in the primipara, or in cases of doublets, or of foot or hand presentation, or other complication of of labor, giving rise to extraordinary irritation of the womb, in other words, creating unwonted eccentric irritation. We seem to lose sight of the additional fact, that the parturient woman, and especially the primipara, is often in a condition of mental, moral and physical excitability awaiting her time, in the prospect of a new and untried and fearful danger, that her womb, fretted and oppressed with an unused and wearying burden, is straining to throw it off and telegraphing its troubles to the brain, already, itself, sharing the general alarm, if not poisoned and intoxicated with uræmic blood—and what can be the result but an explosion of neurotic force finding its vent in the convulsive throes of eclampsia?

Treatment.—When the puerperal woman is under the care of a regular medical adviser, he will, of course, visit her during the latter months of her pregnancy and satisfy himself as to any signs of impending trouble. He will especially inquire if there be any renal deficiency, if there be any constipation, headache, abnormal vision or blindness, will observe if there be any œdema of the face or extremities, and will test the urine for albumen. If one or more of these symptoms be present, he will institute the treatment promptly, without awaiting any nervous explosion. He will put the patient on plain, digestible fare, will forbid any worry or excitement of mind or body, will regulate the bowels with an occasional dose of blue pill, followed by Rubinat water or Rochelle salts or some saline laxative, will direct the daily use of Vichy or lithia water—or even the acetate of potash and infusion of digitalis, if the kidneys be particularly torpid. On the occurrence of headache, or of wandering pains in the back or extremities, he will direct a dose of antipyrin every three or four hours until relieved, or if the urinary secretion be well established, he will inject a sixth of a grain of morphia and one hundred and eightieth of a grain of atropia under the skin, and repeat this treatment as often as necessary to afford relief.

But if, in spite of all proper precautionary measures, nervous symptoms ensue, and eclampsia be threatened or occur, he will reduce at once the amount of circulation through the brain by venesection, administer thirty grains of chloral and thirty of bromide of potash by enema, and await results. How long? Until labor sets in? Or shall measures be at once adopted to inaugurate that event and to hasten the delivery of the child? These are questions difficult of answer, and each physician must decide for himself the line of practice most appropriate in each individual case. I believe that the majority of medical men favor the conservative plan of awaiting the inception of natural labor. Speaking for myself, there are few cases in which I would not prefer to wait. I have on several occasions regretted inducing premature labor, and on more than one occasion, when present as physician or consultant, have had cause to fear that the patient lost her life from shock incident to the rapid dilatation of the *os uteri*, by the fingers of the accoucheur and delivery by turning. So confident am I of this, that I will never again be responsible for the practice of hastily and rudely entering the womb and removing its contents.

When labor has already fully set in, then, under the relaxing effect of chloroform and of chloral upon the patient, especially if their exhibition be preceded by venesection, the physician will not have long to wait. Turning or delivery by forceps afford then an easy solution to one indication, viz., the removal of the eccentric and provoking cause of the convulsions.

The centric causes, the plethoric condition of the blood vessels, and the consequent pressure upon or enlargement of the brain, the hydræmic condition of the blood which exists in some cases, the uræmic poison which corrupts it in other instances, may, one or all, demand our attention, especially in a patient who has not been subjected to any previous treatment, but to whom the accoucheur has been instantly summoned in the hour of danger. In such cases I regard bleeding as the sheet anchor of safety, and the lancet our hope and stay.

I found this the treatment when I came upon the stage of practice, more than three decades ago. I followed it then, and, in all the vicissitudes of theory and the changes of practice which have occurred in that time, I have never changed my opinion or swerved from my course.

On the 17th day of July, 1851, just thirty-eight years ago, and soon after I had put up my sign as a solicitor of practice, I was called to see a woman, æt. 30 years, expecting to be confined of her second child. She was very robust, and plethoric to a degree not often seen. Quite an intelligent midwife was with her, who said that she had been summoned to Mrs. H. four hours before, and finding her with headache, and partially blind, she had opened a vein and bled her four teacupfuls, or about sixteen ounces. I found her restless, delirious, blind, moaning, with her head, face and extremities swollen and livid. The nurse said that she had had a slight convulsion before we saw her. I at once reopened the vein and took thirty ounces of blood *pleno rivo.*

On examination there was no evidence of labor having set in, and another doctor was summoned for consultation. During the hour that I awaited his arrival, she had two most violent convulsions. On his coming we determined to bleed her again, thirty-two ounces more, and to await the supervention of labor before interfering with delivery. I was left with her for the night. This was at 5 o'clock, P. M.

I applied evaporating lotions to the head, opened her bowels with an enema of spirits of turpentine, and remained by her until morning. She rested fairly well, having had only two slight attacks during the night.

On the following morning, July 18th, at nine o'clock, labor pains commenced, and within an hour she had several most violent convulsions, and became entirely unconscious.

Another physician was now summoned, a man of large experience and of national reputation. On examination, the os was about the size of a silver dollar, but rigid and unyielding, and the head was felt presenting. The patient's face was livid, temporals and jugulars swollen, pulse 100, hard and full, and you would not have supposed, from her appearance, that she had lost a drop of blood. The big doctor ordered the vein to be again re-opened and bled her forty ounces, then an enema containing thirty grains of assafœtida and thirty drops of laudanum.

For two hours more the patient had no further attack, was unconscious but quiet, except during the pains of labor, which now progressed very satisfactorily, and we concluded not to interfere. At the end of the fourth hour Mrs. H. had two most violent convulsions in rapid succession, and was delivered *per vias naturales* of a child.

During the two hours subsequent to delivery she had several slight attacks, but under another enema of musk, morphine and assafœtida, she soon fell into a profound sleep and had no more. In two days she recovered her sight and consciousness, and had a rapid and complete recovery.

In reviewing the case, we found that she had lost one hundred and sixteen ounces of blood by venesection in forty-eight hours, besides a pretty profuse flow during the third stage of labor. This treatment seems to border, at least, on the heroic. For myself, an excuse might be made by some one that I was very young and inexperienced; but I had the counsel and assistance of older and better doctors. And I have now to say, after an enlarged experience of thirty-seven years, that I have no apology to offer for my practice. More than that, I did nothing then which I would not do again under the same circumstances. I omitted then that which I would not omit now—viz., the use of chloral by enema, and of chloroform by inhalation. But this occurred nineteen years before Liebrich had given us the great hypnotic and antispasmotic, that incomparable remedy for reflex irritation in the nervous centres. And whilst Simpson had used and suggested the use of anæsthetics in natural labor, no man, to my knowledge, had used it on this side of the Atlantic, and my old preceptor had published his anathema upon any student or physician who would dare to attempt it. It contravened, besides, the law of God, who had declared, as punishment for primeval sin, that woman in pain and labor should bring forth her offspring.

Now both chloral and chloroform are daily remedies, placed in juxtaposition, powerfully auxiliary to the lancet, and sometimes superseding its use.

I have never seen another from whom I could or would take one hundred and sixteen ounces of blood in forty-eight hours for any malady; but I have seen very few whom I could not, and did not, bleed very generously in eclampsia gravidarum.

I have, unfortunately, met with a great many cases of puerperal convulsions in my practice—more, I have sometimes thought, than my share—and whilst I cannot claim, with Chailly-Honoré, that I have saved eighteen out of nineteen with the use of chloroform and without venesection, or, with Professor Baum, that I have saved all of my cases with chloroform alone, yet I will guarantee as good a record as can be found in any clinical history, in private or public practice, in this country.

Petersburg, Va.

ARTICLE III.

TWO CASES OF INJURY OF THE MUSCULO-SPIRAL NERVE, IN FRACTURE OF THE HUMERUS.*

BY WILLIAM PERRIN NICOLSON, M. D., Atlanta, Ga.

There are so many contingencies governing the final result in treatment of fractures, and so many of these are charged to the account of the surgeon, though they are really beyond his control, that anything tending to throw light on the unusual and unexpected, is worthy of report. This view has led me to gather the facts in regard to two cases coming under my immediate notice, which are of somewhat rare occurrence, and that brought in each instance undeserved censure on the physician in charge. In both cases there was fracture of the shaft of the humerus, with resulting injury to the musculo-spiral nerve, involving paralysis, and subsequent trophic changes, from which the patients have never recovered. As the literature of this subject is so meagre, I will be pardoned for giving the cases in some detail.

Case I.--Frank L., æt. 10 years, was brought to me in the Spring of 1889, by Dr. R. A. Mallory, with the following history. About eighteen months before, he was thrown from a pony, and sustained a simple fracture of the humerus, three or four inches above the elbow. He was seen by the physician a short time after the injury, and as no great effusion had taken place, the seat of the fracture could be well defined, and there was little difficulty in reducing it under an anæsthetic. Good apposition of the fragments was secured, and a rectangular splint applied. On the following day, on account of swelling, the bandages were removed, and from that time cold applications were made, until the reaction had subsided. Before long the hand became œdematous, and serum oozed from the fingers. At about six weeks from the time of injury, sloughing of the little finger began, and following this a large part of the ring finger gradually necrosed.

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* Read before the meeting of the Southern Surgical and Gynæcological Association, Nashville, Tenn., Nov. 12, 13, 14, 1889.

When the arm was taken out of splints a little later, it was found that there was a paralysis of the extensor group of muscles, and hyperæsthesia of the palm of the hand. No mention is made of the time at which the paralysis was first noted. The fingers subsequently began to contract, and after a short time could not be extended by force.

When I saw the patient he was about in the condition as detailed above. There was not only "wrist drop," but such contracture of the flexor tendons that it was impossible, even under anæsthesia, to extend the fingers. The last two showed only stumps remaining, and the whole hand was of a dark-blue color, and cold to the touch. Attempts to manipulate the parts were very painful, on account of the great sensitiveness of the skin. There was also a decided anchylosis of the elbow joint.

A tenotomy of the carpal extensors enabled me to get the wrist-joint in much better shape, though the bony changes had been sufficient to prevent it being straightened. The tendons of the digital flexors were found to be tense, and they could not be extended by force. It was decided to await operating on them until the wrist had improved, in the hope that time would benefit them. An anterior splint was applied to the wrist and compression made by a rubber bandage, and the use of the faradic current to the paralyzed muscles recommended.

Under this treatment I am informed that in many respects the improvement has been marked, notably the hyperæsthesia and the faulty circulation, though the muscles are in about the same condition. I am inclined to believe that there will be no permanent change in the condition of the muscles affected without some operation for the relief of the nerve.

Case II.—Mary W., æt. 7 years, was brought to me by Dr. Kirkpatrick, of Tunnel Hill, Ga., for consultation in reference to the injury following fracture of the humerus. There were almost the identical conditions that were detailed in the previous case, with the exception that a plaster of Paris dressing was applied at the first dressing, and in the appearance of the limb at the time of examination, there was no sloughing of the fingers. From the physician who had the case in charge at the time of the injury, I learn that the fracture involved the lower part of the shaft of the humerus, and that the reaction was very great. On removing the dressing a short time after the injury, there was found a slough in the centre of the forearm on the front aspect, though the fingers did not suffer, and it did not appear to have resulted from any unequal pressure of the bandage. Cold applications were applied for some time, to reduce the inflammation, and I am not informed as to the character of the dressing used subsequently, nor as to the time at which the paralysis was noted.

When I saw the patient there was the same character of paralysis described in the first case, and the same contracture of the flexor tendons, both carpal and digital. The hand was blue and cold, though there was not the hyperæsthesia noted in the boy's hand.

I advised tenotomy, and the use of electricity, but as I was just leaving the city for a vacation, the operation was postponed, and I have not since seen the patient. I learn that she will soon come for operation.

When these two cases came to me within so short an interval, I was sufficiently interested to look into the literature of the subject, and I was surprised to see how little mention of the injury can be found in the current text-books on surgery. Though mentioned by some authors, it is in most cases as though not of personal observation, but in the sense of being quoted.

Stimson says, " injury of a nerve is shown by paralysis, loss of sensation, or hyperæsthesia in the parts supplied by it, manifesting itself immediately after the injury, or only after consolidation of the fracture and the removal of the dressing. Paralysis or loss of function indicates division or destruction of the nerve, hyperæsthesia indicates irritation, usually by pressure." I find no further allusion to the subject in his work.

Gross says, " the nerves may, like the blood vessels, suffer serious injury, sometimes at the time of injury, from contusion, laceration, or compression by sharp fragments of bone, or more or less remotely from the manner in which they are constricted by the plasma that is effused around their trunks at the original seat of the mischief." He then gives the usual symptoms that follow nerve injury, and the trophic changes that follow.

Professor Packard (" International Encyclopædia of Surgery") says: " Occasionally cases occur in which in the course of union of fractures of the humerus, nerves become entangled in the callus or pressed upon by it, with the result of causing pain or paralysis, or both, in the limb. Generally it is the musculo-spiral nerve that is thus interfered with. Trelat reports that a young man, in consequence of a fracture of the left arm, had an exuberant callus which, by inclusion, caused paralysis of the above mentioned nerve. An operation was performed, the nerve being disengaged, and the projecting callus removed. Two months afterwards movements began to be possible, and the functions of the nerve were restored. Tillaux is said to have referred to a similar case." He also states that two cases of wrist drop were reported by Prof. Gross from this cause, and an operation for the removal of the callus recommended but not performed.

Prof. Agnew has also reported two cases of this character, but I think no operation was performed. He speaks of a case in a boy improving under the use of electricity, etc.

Prof. Weir Mitchell in his work on the injuries of nerves alludes especially to the musculo-spiral as suffering in cases of fracture of the shaft of the humerus, and quotes some of the authors mentioned above and gives the credit of first operating for the relief of the nerve to a French surgeon many years ago.

More attention is given to the subject by Erichsen than any author that I know, and he figures in his work the characteristic wrist drop occurring in these cases. He calls attention to cases operated upon by Ollier, of Lyons, and Whitson, of Glasgow, in both of which the callus was removed, and a successful result obtained. He also mentions the contracture of the flexor and pronator muscles that follows a long continuation of the paralysis of the supinator and extensor antagonists.

Recently, I have been informed of a case occurring in the practice of Dr. D. H. Howell, of this city, in which a man has paralysis of the musculo-spiral distribution, as a result of a fracture of the shaft of the humerus, but there exists only a paralysis, and none of the spastic condition as found in the cases I have detailed.

In looking over the literature of the subject, there is little of satisfaction as regards the treatment of these cases. Outside of those mentioned, and the report that has come to me through a friend, of an operation successfully made by Dr. Lange of New York, I can find no mention of the resection of the offending callus, though this seems to be the only line of treatment that offers much good.

The question as to the pathology of the injury is of much importance, and should decide the treatment. Paralysis occurring at the time of the fracture would indicate that there was contusion or laceration of the nerve, while the coming on later might point to a neuritis from the violent reaction in the surrounding tissues, or, more probably, the entanglement of the nerve in the provisional callus. Unfortunately, the limb being confined in splints, the muscular weakness is not detected, and, as in both of the cases herein detailed, there are no definite data upon which to rest.

It will be noted that in the first of these cases there is disturbance in the distribution of both the ulnar and median nerves, and the trophic changes that have done the most damage have occurred in the ulnar. This would indicate that either the lower fragment was sufficiently projected to wound this nerve, or that there was set up a neuritis as above suggested, causing the great œdema, and, subsequently, the sloughing of the fingers.

One of the principal reasons that has actuated me in reporting these cases is the serious medico-legal aspect that they present. In both of them there was more or less criticism of the physician in charge, and in one there were steps being already taken towards a suit for damages. It can well be understood how easily criticism could have been entertained, and yet how innocent the physician would be of any share in attaining the result.

As I trust that the opportunity for following these cases will be accorded me, and perhaps for operating upon them, I shall take pleasure in communicating them further to the Association.

With Compliments of Author

ARTICLE IV.

A PLEA FOR THE PRACTICAL UTILIZATION OF HYDROTHERAPY.*

By SIMON BARUCH, M.D., Visiting Physician to Manhattan General Hospital, New York Juvenile Asylum, etc.

Mr. President and Gentlemen of the Academy :

Although it is the first-born offspring of therapeutics, water has experienced many vicissitudes in its struggle for the permanent position which it must surely attain as a remedial measure.

It shall be my aim this evening to appeal to you in behalf of its more general utilization, and my plea shall be based upon historical, physiological and clinical grounds, which, I trust, may bring you, and through you the profession in this country, to the realization that this most gifted child of medicine has been maltreated and neglected, and its power for good has been impaired by an imperfect appreciation of its merits.

As I have said on a previous occasion from this platform, I shall not attempt to furnish an exposition of the hydropathic or water-cure system—that system whose beneficent results are, according to its enthusiastic advocates, destined to revolutionize medicine and to inaugurate the millennium of therapeutics, combining the utmost simplicity with the most marvelous efficacy.

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*Read at the stated meeting of the New York Academy of Medicine, November 7, 1889.

On the contrary, it is my purpose to divorce the remedial use of water from its empirical union with hydropathy, and to urge its simplified utilization by the general practitioner in his every-day rounds.

The history of water as a remedial measure is, as I have elsewhere said, replete with interest, and affords the clearest demonstration of the instability of therapeutic propositions, and the influence of prevailing thought upon the latter.

Its literature is among the most extensive of any remedy. The Surgeon-General's library contains titles of five hundred works and essays upon the subject, and Plohn prints the titles of ninteen hundred and twenty-five works and essays in his account of the literature of hydrotherapeutics up to 1880.

Despite this vast accumulation of historical, experimental and clinical material, the modern works on therapeutics dismiss the subject in a few beggarly lines or pages, preferring to devote their columns to the problematical mode of action and effect of remedies which have not received one tithe of the investigation and practical demonstration.

Vienna, Paris, Bordeaux and Lyons are to-day the only medical centres where hydrotherapy is systematically practiced in the regular hospital. In the former two cities it is taught also by able professors. Hence, institutions abound in these countries where water is applied with more or less precision to the treatment of disease.

A rapid survey of the history of water as a remedy will sustain me, I trust, in the view with which I desire to imbue you—that no remedy has passed so many conflicts with credit, and that, despite professional and lay prejudice, it stands to-day unscathed and challenges assault, secure in its physiological and clinical panoply.

If the history of medicine were the subject of a few lectures in the medical course, much unnecessary labor and groping in darkness would be spared the student and future investigator, and much good would accrue to his future patients. It is singular that while other professions and trades regard the study of the history of their subject as an important element of their education, the physician alone permits this vast field to stand untilled. To the restless medical mind, ever alert for new discoveries, the past seems to present no charm, and yet no subject can be logically and scientifically discussed without a knowledge of previous achievements in its line. "The history of the world," says Goethe, "is the forum of the world. It alone presents to us a portrayal of truth and guards us against error."

The study of the history of medicine has always interested me, and in no direction has it afforded me more substantial grounds for positive opinions than in therapeutics.

The works of Hippocrates, the father of systematic medicine, illustrate how a master mind may grasp facts and make deductions which may stand the test of time. Appearing upon the stage of action at a time when the greatest confusion had been brought into the treatment of disease by priests, philosophers and physicians, this great genius brought order out of chaos into every branch of medicine, and endeavored to endow with true scientifiic dignity the empirical knowledge of the day. In his tract on the use of fluids, he laid down rules for the treatment of acute and chronic diseases by water, which are to-day followed by empirics as well as physicians. After his death opposing doctrines prevailed.

Among the Greek physicians and philosophers who, during the rise of Roman greatness, emigrated from their native land to seek fame and fortune amid the world-conquering people, was Asclepiades, of Prusa. Leaving Alexandria and Athens one hundred years B. C., he entered Rome under Marius and Sylla. Though belonging to a despised class, he became the bosom friend of Cicero, and won for himself eminence, respect and professional reputation because of his great medical talents, his marvelous cures, and especially on account of his genial and sympathetic nature. It was his chief aim to cure *cito, tuto et jucunde.* Hence he cast aside all active medication. Although he practiced bleeding, he did so cautiously, and he depended chiefly on diet, rubbing, exercise and *baths.* I have frequently remarked in the study of this subject that the same men whose judicial medical thought elevated them so far beyond their contemporaries as to resist the prevalent practice of excessive venesection and active medication, exhibiting a regard for the conservative tendencies of nature—the men who, in those dark days of medical history, approached most nearly the spirit which governs the therapeusis of the present enlightened era—these were the men who were invariably pronounced advocates of water as a remedy.

Asclepiades, the philosophical founder of the school from which sprang Themison, Antonius Musa, Cornelius Celsus, Cœlius Aurelianus, was so warm an advocate of baths and douches that he was dubbed "Psychiolutas." Through him hydrotherapy was popularized in Rome.

A member of his school it was, Antonius Musa, who maintained the aim of his noble master, to rescue his calling from the disrespect with which it was regarded. To him the Emperor Augustus owed restoration to health by a rigorous cold-water treatment. Suetonius tells us that the grateful Cæsar bestowed, not alone upon Musa but upon the entire medical profession, the privileges of citizenship, besides erecting to him a statue next to Æsculapius. Horace, too, was his patient. His first Book, Epistle vi. (Smart's translation), tells us: "Antonius Musa pronounces Baieæ to be of no use to me, yet makes me obnoxious to the place, when I am bathed in cold water, even in the midst of the frost, by his prescription."

Cornelius Celsus, the learned Roman (called Latinorum Hippocrates, Medicorum Cicero), the bosom friend of Ovid and companion of Fabius Maximus, prescribed water freely in acute and chronic diseases. His opinions on the prevalent blood-letting mania mark him as an eclectic of the highest type.

The same may be said of Cœlius Aurelianus, who was the originator of the abdominal compress of wet sponge for hypochondriacs. Galen, too, was an able but judicious advocate of cold-water baths, and advised cold affusions upon the head, while the body was immersed in warm water.

In the dark days of medicine which followed the death of Galen, when all branches of human knowledge suffered from the ignorance, witchcraft and fraud arising from the barbarism of migratory peoples, from the destruction of the Alexandrian library and school, from the demolition of the Roman Empire, the plundering of the Saracens and the conquest of Spain, science and art lay prostrate. At this time Alexander of Tralles and Paulus Agineta appeared like meteors upon the medical horizon. The former refused to rely upon any system of medicine, but insisted with a true philosophical spirit, which would do credit to him to-day, that the physician must depend in each single case upon the age, constitution, natural powers and mode of life of the patient, as well as upon the climate and all allied conditions and effects of nature. He furnished directions for bathing and rubbing in many diseases, and a special dietetic treatment for gout.

Paulus Agineta, who is regarded as the greatest physician of the seventh and eighth centuries, was an enthusiastic advocate of water, and he it was who first advised the cold douche for sunstroke and anuria.

The next prominent figure in the history of hydrotherapy is Savanarola, the grandfather of the unhappily famous professor of

Ferrara. He cured the Marquis Nicholas D'Este by cold affusions, and recommended them in fevers, dysentery and leucorrhœa.

Since no history seems to be complete without the Chinese, Julien (*Comptes Rendus*, 1849) tells us that in the annals of the dynasty of Hâ, the biography of Hoa, a celebrated physician, is written. Hoa used hydrotherapy by sweating and cold water. The historian relates that in a case of rheumatism Hoa ordered one hundred affusions. After the seventeenth the woman thought herself dying; after the twenty-fourth reaction ensued, the internal heat came through all her pores, rising in vapor two feet above her head. After the one-hundredth she was put into a warm bed.

In the seventeenth century Herman van der Heyden regarded water as a panacea, reporting three hundred and sixty cases of malignant dysentery cured by its use.

Passing over lesser events, we come to an epoch in hydrotherapy created by Floyer, the Englishman, whose book, published in 1697, passed through six editions, and was translated into German forty years later. Although he was an educated physician, he may be termed the first exclusive hydropath. He energetically propagated his views by his writings, making many converts at home and abroad.

This learned enthusiast was succeeded in the advocacy of hydrotherapy by Friedrich Hoffman, the most illustrious physician of Europe at that time. He held a professorial chair, and, commanding great respect, found many followers. His doctrines were imported into Italy and thence found their way to France, and back again to England, where Floyer had prepared the way. Theden, the surgeon of Frederick the Great, was the first to use water in small-pox, malignant fever, rheumatism and inflammation of the joints. He improved the shower-bath.

In 1743 a Silesian physician, Johann Sigmund Hahn, and his son, established the principles of modern hydrotherapy in Germany, applying it in acute and chronic diseases, especially in small-pox and the other exanthemata.

Hence the same country which later produced the first great empiric, Priessnitz, may be credited also with the first great hydrotherapeutist.

During the prevalence of the pest in Moscow in 1771, cold water was used very successfully.

Among the few historical facts which are familiar to most physicians, the exploits of Wright and Currie in the treatment of acute fever may be mentioned. Currie's work was translated into several modern languages, and his practice was introduced into the Vienna Hospitals by Joseph Franck.

To mention Hufeland, the enthusiastic and yet judicious advocate of hydrotherapy, is to give the imprint of true medical wisdom to it and to indicate its wide adoption among the profession. He offered a prize for the best treatise on the action of cold water in fevers, determined by scientific thermometrical study. Dr. Frœhlich, a Vienna professor, was the most successful of three competitors, all of whose essays were published in 1823 by Hufeland.

But despite these eminent and enthusiastic advocates, hydrotherapy did not become popular until the appearance of the peasant Priessnitz. His history is doubtless familiar to all my hearers.

In 1840 he had treated over 1,500 patients from all parts of the world by the methods he had invented, and when he died, twelve years later, he had amassed several millions.

The impression made by the empiric marks an epoch in hydrotheraphy. His success was brilliant, as you know; a copious literature sprang up in all parts of the world and many institutions were modeled after his. The government built roads to facilitate access to his establishment; monuments and fountains were erected to his memory. Physicians from all countries, who had been attracted to the Silesian peasant's mountain-home, became converts to and missionaries of his practice.

An interesting chapter in the history of hydrotherapy is furnished by an incident in 1839.

Drs. Engel and Wertheim petitioned the French government for permission to open a hydropathic institution. The petition was referred to the French Academy of Medicine, which appointed a committee, consisting of Bouilland, Velpeau and Roche. The latter delivered such a tirade against hydrotherapy, characterizing it as dangerous, unscientific, chimerical and opposed to the simplest laws of physiology and pathology, that the sixty members present opposed an adverse report amid great applause. On this report the Minister of Instruction refused to grant permission for the erection of hydropathic establishments to Engel and Wertheim. These physicians appealed from the decision of the academy and requested the authorities to investigate hydrotherapy in the hospitals. This was done in the Hôpital St. Louis, under MM. Gibert et Devergie, in 1841. These made a favorable report, which resulted in the withdrawal of the interdiction previously ordered. Thus has it ever been when the biased views of inexperienced opponents were met by clinical demonstrations in hydrotherapy. Bouilland, the chairman of the committee, recanted.

A few years later, Scoutetten was sent to Germany by Marshal Soult to study hydropathy. He reported that "while it cannot be reckoned a universal method, it exercises an undoubted influence on the public health, and the numerous permanent cures it has wrought in intelligent persons recommend it to popular attention," etc.

"It lies in the interest of humanity and medical science that the demonstration of the forms and aids of hydropathy in Paris should take place under the eyes of able physicians."

This report gave a great impetus to the development of hydrotherapy among French physicians to whose honor it redounds to-day in the works of Lubanski, Latour, Schedel, Fleury, Duval, Dujardin-Beaumetz and others.

Modern fever treatment received its great initiative from Ernest Brand, who in 1861 published his remarkable results from immersion and compresses of water from 54 to 68°F. Bartels and Juergensen are names familiar to the present generation. Vienna became a great centre of hydrotherapy, which it has remained under Winternitz, its chief modern promoter.

This rapid, hence imperfect review, brings us down to the present day, and I ask you to listen to what a few of the great clinical teachers of the present day say of that method of treatment which has received the highest encomiums from Hippocrates, Asclepiades, Celsus, Hufeland and Currie.

Niemeyer in his book on practice says of it in scrofula. "A series of cases are on record in which complete and perfect cures have been obtained by these means, after all other methods of treatment have been applied in vain."

Ziemssen, the renowned clinical teacher of Munich says it plays "an extraordinarily important *rôle* in tuberculosis;" it acts very favorably upon disturbances of the digestion; it is highly valuable in neurasthenia.

Struempell, whose translated work is now a text book in our colleges, says: "There is at present no other single method of treating typhoid fever with such numerous and evident advantages for the patient," as the bath.

Prof. Fraentzel, of Berlin, says: "Experience has taught us up to the present time that the really brilliant results, in the treatment of severe febrile diseases, may only be attained when cold baths form the basis of treatment."

From France we hear the recent utterances of Dujardin-Beaumetz with his lectures at l'höpital Cochin. "The benefits we obtain from cold water in the cure of disease arise from its physiological effect upon the circulation, the nervous system, the nutrition, and from its repulsive and heart-lowering influence."

Prof. M. Peter, of the "Paris School of Medicine," in his preface to the magnificent clinical work on hydrotherapy of Duval published by Baillière last year, says: "Hydrotherapy suffices in most cases of disease; added to other treatment, it is a most powerful auxiliary.' "Can any one speak better or say more of it," he asks.

F. A. Hoffmann, in his "Lectures on General Therapeutics," published this year, and said by the reviewer, Professor Ewald, to be the most able work on that subject, says:

In time *all chronic diseases will come into the domain of the bath treatment*, although it is not so much considered now. (B. K. W. 89.)

Semmola, the professor of therapeutics at the Naples School, said, very recently, in referring to the value of physical agents for the cure of disease, "the chief of these is hydrotherapy, by which real marvels of recovery in severe and desperate cases are accomplished. It is to be regretted," he continues, "that physicians in general do not accord to hydriatic treatment the value to which it is entitled. Hydrotherapeutics represent in an entire series of affection, especially those in which tissue changes are involved, *the only effective rational* etiological treatment."

I might multiply these opinions ad infinitum. But I have selected them from men who are *not special hydrotherapeutists*, but who are teachers of medicine in the best schools of Germany, Italy and France—men, too, who are known everywhere as representatives of good clinical teaching.

History has repeated itself here as in other departments. The opinions of the most judicious, philosophical and successful physicians of past ages, have been sustained by the judgment of the most enlightened era.

RATIONALE OF HYDROTHERAPY.

The question I now propose to discuss, is "Why has the remedial use of water maintained its hold upon some of the most able physicians in every century of medical history, despite the prejudices of the lay and medical public?

Why have the vicissitudes of hydrotherapy not swept it from the therapeutic field, as has been the fate of many more highly vaunted remedies?"

Blood-letting, that remedy which for centuries towered above all others and promised to resist the onslaught of its ablest opponents, is an example of the fate of a remedy which lost its foothold, so soon as the fierce light of modern physiological research exposed the fallacious reasoning upon which it was based.

Hydrotherapy, on the contrary, has maintained its position not only on clinical grounds, but it is to-day more firmly entrenched, because it is based upon well ascertained and exact physiological facts, the application of which forms the most brilliant chapter of clinical medicine.

The more fiercely the light of modern research beams upon it the more glaring become its points of vantage over many other remedies, *which, however, it should not be permitted to entirely displace.*.

To demonstrate the validity of this claim there is a wealth of material from which I will select a few striking examples.

The works of Winternitz, Schueller, Roehrig, Naumann, Chapman, Delmas, Thermes, Pleniger, Bottey, Scheuer and others, teem with experiments on animals and man, which must prove to the unbiased observer, that by means of the thermic and mechanical effects of water decided modifications may be impressed upon all the functions of the body.

Let us take, for instance, the most simple experiment of applying cold water to the skin. May we not thus arouse a patient from syncope; may we not modify tactile sensation to any extent from the mildest effect to complete obeyance? May we not diminish the calibre of blood-vessels to any extent by cold, until their coats lose their tone altogether, or until they are dilated again by reaction?

Surely these effects and many others can be so positively controlled by a medicinal agent.

We have physiological grounds not alone for these but for many other effects.

Naumann has, by experiments on frogs, established such definite results on the subject of the action of cutaneous stimuli that Winternitz accepts them as laws. He separated the head from the body, leaving them connected only by the medulla; he also severed one leg, after preventing loss of blood by tying the vessels, so as to leave it connected only by the sciatic nerve. He now applied thermal and other stimuli to the foot of the partially severed leg, while he observed the circulation of the mesentery with the microscope. Having observed certain changes in the latter, he formulated them as follows:

1. The effect of irritants is produced by reflex action from the central organs.

2. These irritants exert considerable influence on the heart and vessels.

3. In proportion to the irritability of the individual, powerful cutaneous stimuli lessen or weaken cardiac action, dilating the vessels.

4. Relatively weak stimulation (of the periphery) increases and strengthens cardiac action, narrows the vessels.

5. The changes produced by long-continued skin stimulation last some time; longer if stimulation has been prolonged; even one-half to three-quarters of an hour beyond time of stimulation.

6. Relaxation of pulse following powerful stimulation of the skin often attains its maximum at once; at other times not until its conclusion.

7. The excitant effect of weak cutaneous stimulation also continues after its conclusion; but it is also followed by (a less pronounced) relaxation.

8. Powerful cutaneous stimulation is always followed, after a period of warming, by a cooling down of the body, which lasts often over an hour, sometimes occurring during the stimulation, but, as a rule, after its cessation.

Schueller's observations on the circulation of the pia mater of a rabbit, which he had trephined for the purpose, are definite and unimpeachable, and explain many of the hydrotherapeutic processes. A cold stream of water on the belly or back of the rabbit at once contracted the blood-vessels of the pia, if brief, but dilated them if prolonged. A warm compress applied to the belly contracted the vessels of the pia. Cold baths dilated them in proportion to the area of the body immersed; only after prolonged immersion in cold water, a contraction of the vessels ensued as the result of the reduced blood temperature.

The vessels continued contracted for about half an hour. If the body was immersed in warm water, a decided contraction of the vessels of the pia ensued, and they remained somewhat contracted for some time. Schueller's experiments with the cold pack on rabbits agree with the effect of these applications on man.

These experiments have been verified on man by Franck, who, in Marey's laboratory, has demonstrated, by means of self-registering instruments of precision, that if one hand be placed in cold water for two or three seconds, the other increases in volume, the increase continuing for one minute. Winternitz also verified Schueller's experiments on man by measuring the size of the arm by a pletysmograph while the patient sat in a tub, receiving a cold affusion. The effect was a sudden increase of volume. The blood is thus proved to be driven from one part of the body to another.

Winternitz has also demonstrated that the application of cold water to certain definite parts of the surface exercises a positive influence on definite vascular areas. Thus, cold applied to the feet affected the intra-cranial circulation; applied to the thigh, the pulmonary circulation; to the back, the mucous surfaces.

But not alone on the smaller vessels have these effects been demonstrated. The heart, too, has been proven to distinctly respond to temperature impressions upon the periphery. And that this result is brought about by reflex action is shown by Roehrig, who failed to obtain any action upon the heart when the vagi were severed. He demonstrated on the rabbit that moderate cutaneous irritations increase cardiac contraction, while they diminish them if intense or prolonged.

The experiments have also been verified by Winternitz in Vienna, and Delmas in Bordeaux, the only centres where hydrotherapy is practiced in regular hospitals.

Roehrig had previously utilized his physiological experiment in the treatment of heart diseases, in which cool baths (27° to 24° C.) reduced the frequency of the pulse, and he deduced from their application in other diseases also a confirmation of his physiological experiments.

We therefore know positively that low temperatures briefly applied accelerate the heart's action; that a prolongation of low temperature diminishes it, and that the reaction following the latter also diminishes it. The application of high temperature to the skin lessens the pulse rate at first, but if continued it is quickly followed by an increase. The direct effect upon the cooled blood in prolonged application of cold must not be lost sight of. It has been demonstrated by frequent experiment that cold applied directly to the heart diminishes its beats, and heat accelerates it. Hence, when we send cooled blood from the periphery, by the cold baths in fevers, to the heart, we invigorate it and slow its action—a clinical fact that is indisputable.

If, further, as has been often demonstrated by the sphygmograph, the vascular tension may be modified at will by hydrotherapeutic procedures, we have another proof of our powerful influence over the heart's action. Indeed, so decided is this influence upon the entire circulation that hydrotherapy really reduces it, as Winternitz justly says, to a hydraulic problem.

As the blood stream moves in a definite, closed system, rapid changes can only be induced in it, when in normal condition, by an increase of the propulsive action of the heart, or by decreasing the latter, or by inducing a fluctuation in the capacity of the vascular area. All this has been done by physiological experiment, and has been verified by clinical experience.

When it is remembered how perfectly we can control these hydraulic changes by means of reflex as well as direct effects through the agency of water of different temperatures, and how these changes may be varied upon an almost exact scale by careful attention to the degrees of temperature, difference between the water and the recipient, to the degree of sensitiveness to impression of the latter, the amount of mechanical impetus of the stream, the extent of surface to which it is directed or made, the vital condition of the patient and the object to be attained—when all these elements are duly considered, it must be evident that we possess in hydrotherapeutic procedures a *most flexible measure for influencing the vascular system.*

The effect of thermic agents upon the temperature of the body is perhaps better understood than the effects referred to above. That the temperature of the body may be reduced has been so often demonstrated that all physicians are familiar with the fact, also that the human body is not affected by cold and heat like an inanimate body, but that it reacts against these thermic stimuli. But it must be remembered that the vital processes by which the system endeavors to protect itself against thermic disturbing influences are also *definitely ascertained.*

The familiar example of shriveling of skin, when extreme, but tolerable heat or cold are applied to the surface, is due to the vascular spasm and constringing effect of these thermic irritants. This vascular spasm protects the internal organs against too rapid cooling or heating. The secondary effect of cold or hot applications to the cutaneous surface are so well known that I need only call them to your attention as follows:

Cold, if evanescent, is followed by reaction, which dilates the vessels vigorously; heat, if evanescently applied, is also followed by dilatation, due to passive relaxation. When the superficial vessels contract in response to a more prolonged application of cold, there is a collateral hyperæmia established in the nearest muscle tissues, which protects the body against the rapid invasion of the cooling blood; being thus supplied with more blood, more heat is evolved. The prolonged application of external heat, on the contrary, produces, as is familiarly known, an increased vascularization of the skin, and thus enhances its function, with the result of increasing perspiration; a large quantity of blood is retained in the relaxed vessels, if the application be prolonged, reducing the quantity in the muscles and other organs, and thus diminishing heat production.

By means of the calorimeter, Winternitz has positively demonstrated that the giving off of heat depends upon the cutaneous circulation. He has absolutely proved that during the most active condition of the skin function, three and one-half times the normal heat loss may be compensated, or it may be increased three and one-half times.

As the great bulk of heat is produced in the voluntary muscles, which form about one-half the body, it follows that the increased activity of the circulation in the muscles, aroused by the external application of cold, is capable of producing an increase of heat.

Liebermeister made this discovery in 1859, and demonstrated it in the human subject. His results were confirmed by the experiments of Hoppe, Koenig, Juergensen and others.

Juergensen showed that if the application of cold be prolonged, or the temperature very low, the inner temperature sinks rapidly. If the baths are not above 75°, they may, according to Liebermeister, continue for twenty-five minutes ere the temperature begins to fall. These principles are applied successfully in fever management, and explain the differences experienced by different observers in the cold bath treatment of typhoid fever.

The clinical experiments of Delmas and Bottey have also demonstrated the flexibility of hydrotherapeutic procedures on these principles. If the cold be applied briefly with a douche, we have, according to Delmas, an intense sensation of cold, quickly followed by a feeling of general warmth; but during the reaction which ensues, the temperature contiues to fall from 0.6° to 1° C. for two hours after the douche, especially if the patient exercises after it. Hence the simple sensation of cold or heat is not an index of the actual body temperature in health any more than it is in the cold stage of an intermittent. According to Bottey, if the douche is 8° C., lasting two or three seconds only, the fall of temperature is preceded by a brief period of elevation of 0.1° to 0.2° C. But if the douche lasts ten seconds, there is no elevation at all, as Delmas has shown, but a fall lasting several hours.

Upon the anatomical conditions of the blood also the action of cold has been determined. Thermes has shown, in 1878, by very thorough investigation with Hayem's hæmatometer and calorimeter, that the number of blood globules was not only increased by the douche, but that their quality was improved. This mathematical demonstration, repeated by Winternitz, is verified, as I will have occasion to show, by clinical experience.

The influence of thermic irritants upon the nervous system has been so often demonstrated that I need not refer here to any special investigation. Physiological experiments have repeatedly shown that we may stimulate or depress it by reflex action.

What is the aggregate result of the effect upon the cardiac action, the vascular tension, the quality of the blood, upon its distribution, together with the effect upon the heat production and elimination, and upon the reflexes of the nervous system? Surely an agency which is capable of impressing such modifications upon vital processes as physiological experiment has exactly demonstrated with regard to hydrotherapy, must exercise a paramount influence upon nutrition, tissue change, the secretions and excretions—on all those processes which depend upon the circulation innervation and heat production for their execution.

As has been well said, nine years ago, by Dr. Mary Putnam-Jacobi, in the only scientific work on hydrotherapy produced in this country:

"The increased production of heat, determined by the stimulation of the heat-regulating apparatus, irrespective of the amount of heat abstracted by the cold, involves functional activity (1) in the sensitive afferent nerves; (2) in one or more parts of the nerve centres; (3) in centrifugal nerve fibres of some kind terminating in muscles; (4) in the muscles where are performed the chemical processes involved in the production of excess of heat. Thus the organism is induced to perform a definite and not inconsiderable amount of work. On this account its nervo-muscular tissues, or a large portion of them, are brought into a condition favorable to nutritive assimilation. But this is not all. When the reaction after the cold pack is normal, the column of blood which sets inward toward the chylopoëtic viscera very soon turns outward again, accelerating the entire circulation of these organs in the same direction. As a most important result, more nutriment is carried into the general circulation, and with the abatement of the gastro-intestinal hyperæmia the appetite revives." Dr. Jacobi goes on to explain the effect of a prolonged wet pack in a manner at once so original and acute that I take the liberty of quoting her in extenso.

"Sleepiness during the pack," she says, "nearly always occurs in successful cases, and we have found the greatest benefit to accrue when the patient was able to sleep for half an hour after the completion of the pack and massage. If during the first period of the pack, we may assume, for reasons already stated, that blood circulates in increased volume and under increased pressure through the nerve centres, and that, in consequence, the acid fatigue products, which had been maintaining a permanent excitement of nerve elements, could be completely removed; the immediately subsequent diminution of blood supply, effected during the second part of the pack, cannot fail to be a great advantage. For it lowers the functional activity of the nerve tissues that has been unduly prolonged, and brings them, therefore, into the condition which is a necessary preliminary to the beginning of nutritive assimilation. The diminution of blood supply is not sufficient to interfere with this latter process, for it is not below the point which exists in sleep, the physiological period of a nutritive assimilation in nervo-muscular tissues. Accepting Ranke's law for these tissues, that they are only nourished when fatigued—*i. e.*, relaxed—we may see further, in the muscular relaxation induced by the warm moisture of the pack, a condition most favorable for the nutrition of muscles."

I feel a pride in laying before you these valuable deductions of our distinguished fellow, because Winternitz, who is most ingenious in explaining hydrotherapeutic procedures on a physiological basis, said in his great work: "The metabolic changes in heat abstraction and heat supply are in many directions still enveloped in a thick mantle of obscurity. It would be most desirable to fill up, without delay, these gaps in our science."

This has been done, to a great extent, by Dr. Putnam-Jacobi. Exact observations made upon the healthy and diseased subject enable us to ascertain the *effect of thermic influences upon the formation of carbonic acid* and the decomposition of albumen, which afford a clue to the changes impressed upon them by tissue metamorphosis.

Liebermeister has proved beyond a doubt that the excretion and production of carbonic acid are increased by cold spraying, the sitz bath, and even by simply uncovering the body in cold air. In a bath of 64.4° the excretion of carbonic acid increased three-fold, and continued for some time. Roehrig and Zuntz have shown, by experiments on rabbits, that there is also a corresponding increase in the consumption of oxygen.

These investigations have been confined by Finkler on guinea pigs, Duke Carl Theodor on the cat, and by Carl Voit on man. Dujardin-Beaumetz quotes Quinquand's well conceived and originally executed experiments, showing that more oxygen is taken in and CO^2 expelled under the action of cold. He says that these experiments decide the question from henceforth, and we are now warranted in affirming as a physical law that under the influence of cold the oxygen combustion is energized and augmented, on condition always that the refrigeration shall not exceed certain limits and cause a depression of the rectal temperature.

Carl Voit has proved that the decomposition of non-nitrogenous matter is chiefly increased by cold baths, and that this increase is due to changes taking place in the muscles, which are called forth by the effect of the cold upon certain nerves of the periphery. This conclusion has been re-affirmed by Pflueger, Samuels, Roehrig and Zuntz.

Liebermeister has shown that the decomposition of albumen, however, is not altered by the cold bath, unless the rectal temperature shows a great reduction. This he has demonstrated by the absence of any change in the excretion of urea, unless the latter occurred. Senator, too, has shown on dogs that no change in urea excretion occurs unless the bath be so cold as to reduce the temperature very much. And Voit has confirmed these results by observations on the hibernating marmot. (Leichtenstern-Balneotherapie.)

The hot and vapor baths, on the contrary, which *increase* the temperature of the body, produces an increase of urea, as shown by Bartels, Naunyn and Schleich, and more recently by Godlewsky (Anton Fry, Die Schwitzbaeder, Volkmann's Vort. No. 332 p. 309). The latter has shown conclusively that a decided acceleration of oxidation of nitrogenized substances (nutrient and tissue albumen) results from these baths, which lasts several days beyond the time of the bath and that this is accompanied by an increased consumption of fat.

Thus we see that the prolonged wet pack of Putnam-Jacobi approximates closely to the vapor baths of Bartels, Schleich and Godlewsky, and forms, as is well recognized in hydrotherapy an intermediary method, capable of almost exact gradation.

These facts furnish another illustration of the flexibility of hydriatic procedures.

CLINICAL EVIDENCE.

Having in this imperfect manner, for which the time at my disposal is responsible, presented the historical and physiological ground upon which I base my plea for the practical utilization of hydrotherapy I proceed to discuss a few clinical points, which may succeed in winning you over to the acceptance of the views advocated. Unfortunately, *experience* has been so often invoked by the empirics upon this subject that the profession has looked askance upon this argument.

I propose to limit the clinical demonstration to evidence derived from trustworthy sources, and from my own limited field of observation. I agree with the latest German author on therapeutics, F. A. Hoffman, who says that he does not deal with the disease, but with the sick man, and who divides therapeutic methods into the direct, which act by removing the cause, and the indirect which, by influencing the circulation and nutrition of one or other organ, or the general tissue changes, seeks to remove disease or make it recede. But I would add a third method—that by which we may so impress the various functions of the body, chiefly through the innervation which governs them all, as to enhance the resisting power of the patient and thus enable him to escape the dangers which are known to be lethal. All these methods, I propose to demonstrate, may be exemplified to a certain extent in the proper application of hydrotherapy. Far be it from me, however, to claim this as *a universal remedy*, which shall enable us to dispense with drugs. I stand second to no one in high appreciation of the medicinal agents, which the practice and custom of many years have established as reliable, and especially of those more modern products of the pharmacist whose effects have been demonstrated with so much precision.

I claim for hydrotherapy only the position of a valuable but an indispensable auxiliary to other treatment.

As I conceive it and as I would ask you to define it, *hydrotherapy is the utilization of water at any temperature and in any form* (from ice to vapor) internally or externally, *for the treatment of disease.* I do not say "the cure" of disease. By this definition we emancipate it from hydropathy or cold water cure and place it clinically in the front rank of therapeutic measures.

We will now proceed to illustrate the three therapeutic methods I have mentioned, by clinical evidence, and I propose in this paper to hold my personal experience, as far as possible, in the background, unless I can verify it by reports from other sources, in order to diminish the possible tendency of an overzealous advocacy of hydrotherapy. The removal of the cause of disease is not often within the province of physicians; since etiological factors are exceedingly difficult to discover. The modern discovery of the microbic origin of many diseases will, if verified by clinical experience, present a large field for therapeutic labor in this direction. Therefore less has been accomplished in this direction than we wish and hope. In the gastric and intestinal diseases of infancy, however, we seem to be on the threshhold of its fulfilment. Clinical study has demonstrated, that many of these affections are due to the toxic products derived from the microorganisms which have found their way into the alimentary canal, chiefly through milk food in Summer. To remove these, and to reinstate the gastro-intestinal functions, water has been used with great success.

I will not here enter into details upon this subject, which I have fully discussed it in the Pediatric Section of the Academy in a paper entitled "The Treatment of Summer Diarrhœa of Infants." I have there gone over the entire ground carefully, and I am glad to note that the same field has been since that time, successfully tilled by others.

Intestinal irrigation carefully and thoroughly done with a large Nélaton's catheter, with the patient on the abdomen, and by means of a fountain syringe, holding not less than a quart of warm water, has proved the most efficient method of treating several types of Summer diarrhœa, even after they had assumed a threatening phase. The literature of this subject is abundant, Dr. Seibert of this city has published important results from stomach irrigation alone, and Drs. Ebstein, Baginsky, and others, have established this purely hydriatic treatment as the most effective. Another hydriatic method, which acts by removing the cause of disturbance, is the sipping of hot water an hour before meals in dyspepsia. The hot water craze which now has taken firm hold upon the lay public, is but the legitimate outcome of a valuable therapeutic application of water, whose simplicity commends it at once to the judgment of the intelligent physician. Brought into prominence by Dr. Saulsbury, who committed the error of most enthusiasts, of regarding it as a panacea for most diseases, it has now been adopted by the profession as a most valuable agent in some gastric troubles. By removing the products of fermentation, by cleansing the mucous membranes of mucus, it restores tone and vigor to the gastric lining and enables the natural forces to come into play.

It is important to observe strict compliance with the rule laid down by the originator, viz., that the water be sipped as hot as possible, and that an hour should elapse before a meal is taken. Examples of failure due to neglect of this rule are numerous, in the experience of all medical men.

The second method of treatment referred to, viz., that which acts by affecting nutrition and tissue changes, presents a broad field for the employment of hydrotherapy in the various modifications. To this category belong neurasthenia, and other nervous diseases, rheumatism, gout, anæmia, and chlorosis, obesity, scrofula, etc.

For practical purposes in hydriatic management, I divide neurasthenia into two types—the erethic and the true asthenic. The former is characterized by an instability of the nerve forces, the latter by their enfeeblement. The former is most properly treated by soothing hydriatic pressures, such as cool ablutions, a prolonged wet pack, followed by the half baths of 65° to 70° F. once or twice daily. The asthenic form, on the contrary, requires the stimulus from active reaction, produced by the infringment of a mass of *cold water for a brief period;* and the effect is greatly enhanced by general faradization, which, in the first type, is contra-indicated.

Between these two extreme types, there are intermediate forms, to which the flexible procedures of hydrotherapy adapt themselves admirably. In a brief review like the present it is impossible to enter more fully into the subject. But I may say that in no question of therapeutics is a judicious regard for the condition of the patient and the type of the disease so important as in the selection of the proper method, temperature, duration and frequency of repetition.

Mrs. D., æt. 33 years, came to me March 10, 1889, from Brooklyn, claims to be miserable, nervous and dyspeptic for years; has three children, youngest six years old, and is now six months pregnant. I will not weary you with her catalogue of symptoms, except that her pulse was irregular, manner exceedingly agitated, eyes restive; she had no hope of recovery, having had medical treatment constantly, and among her attendants two justly eminent teachers and hospital physicians. Severe attacks of palpitation and fright disturb her sleep. She claims to be unable to digest anything, because all food distends her stomach and produces violent eructations without relief. A full meal of mixed food (some of which she had not tasted for years), was ordered, and four hours later her stomach was washed out. *Neither food nor mucus was found.* Diagnosis: Erethic type of gastric neurasthenia. Ordered aloes and mastich pill at bedtime; hot water an hour before breakfast; cold ablutions, 60° F., every morning after rising, while standing in fifteen inches of hot water, followed by friction. Sixteen cells of a constant current battery were used by negative poll over epigastrium, positive on back, every third day. She was entirely restored in one month.*

Miss W., daughter of an Ohio physician, æt. 23 years, anæmic, came to me May 15, 1889. Has been ill three years, at first suffered fainting fits at menstrual period; afterwards violent pains in right hand, traversing body and concentrating in epigastrium, for which her father administered morphia for a month. Now her stomach became irritable, and has continued so until the present time; she vomited and spat up nearly all her food, more frequently solids. Seabaths did not improve her. She studied hard and got worse. In the Fall of 1888 she lived on milk and farinaceous mush, and her stomach was washed out regularly, but grew worse. She now became emaciated—took peptonized milk for a month, but vomited it; tried meat with same effect. Last Fall she lived on grapes, which agreed with her. Had tonics, pepsin, and all possible medication her father and brother could muster, without avail. She was sent to me by Dr. Bosworth, after being in the city for three weeks without improvement. She now vomits every day, is anæmic and depressed. She traced her ailment to painting lessons, but I drew from her a history of a potent psychical factor as a cause in the sudden violent insanity of the favored nurse of her childhood.

Diagnosis: Gastric neurasthenia of the pure type. Stomach was washed twice a week to remove mucus and fermenting material. General faradization daily, also the wet sheet. She received a brisk rubbing over the snugly applied dripping sheet (water at 60° F.), while she stood in a tub of warm water. Under this general treatment vomiting ceased entirely, she went to the seaside improved in July; on her homeward journey called to tell me that she had grown stout and felt perfectly well.

Such cases are not infrequent in my experience, but these two illustrate the difference in treatment. No medicinal agent requires as much judicious grading of its dose as the application of water in the treatment of disease. This is one of the obstacles to its general adoption. For I have known the most intelligent physicians commit the most grievous errors in this regard. Duval mentions a case of functional vomiting of four years standing which had resisted the most active and varied treatment, for which no less a man than Chomel recommended cold affusions for five minutes from a bucket. The patient almost collapsed, and it was difficult a year later for Monneret to persuade him to try hydrotherapy again, when Duval cured him by rain, and jet douches of *a few seconds'* duration in six months.

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* On November 20th she called to inform me that she had safely passed through her dreaded confinement and had remained well.

Hysteria in its protean forms presents a wide field for hydrotherapy. In my personal experience many cases have yielded to the tonic influence of various hydriatic procedures. Here, too, it is important to differentiate the types of the malady and adapt our procedures to each one with precision. In the sthenic form, occurring in well-developed women, especially among those who are leading a life of luxury and ease, the calming effect of the prolonged wet pack is indicated. Such patients require a daily pack from one to two hours in a linen sheet wrung out of water at 75° F. The discipline resulting from the enforced rest, the soothing influence on the peripheral nerves (as Heiman and Krebs have shown by physiological experiment), by the moist vapor which forms between the blanket-covered sheet and the closely enveloped body, the reduction of the pulse (which has also been demonstrated by Johnson and Petri), the withdrawal of blood to the periphery; all these factors determine a condition of the central nervous system, which must favor a restoration of the lost equilibrium, and this is really the result. The patient, after the second or third pack, becomes more calm, her excitability is diminished, and if the treatment is aided by other remedies, medicinal and hygienic, it will almost certainly be effectual, according to my limited personal experience.

In these cases it is well to be cautious about the temperature and duration of the half bath which should follow all wet packs (for the purpose of restoring the tone of the superficial vessels). The temperature should be about 85° F., and a sponge should be used rather than the hand, the patient always assisting.

In the asthenic form of hysteria in which the patient is hypochondriacal, or in which a paroxysm is brought on by psychical causes, especially if she be anæmic, the rapid application of water at a temperature of 50° or 60° F. is indicated. This may be done by affusions, while the patient stands in hot water, or by a plunge into water of 60° or 65° F. If a douche is convenient, water 40° to 45° may be used for two or three seconds with advantage. The aim here is to stimulate the peripheral nerves, and through the latter the central nervous system. At the same time we obtain by these measures the general tonic effect upon the blood and nutrition. The Scotch douche, which is an alternating stream of cold and warm water, is useful in melancholic patients, whose general tone should, however, be elevated by other hydriatic procedures and medicinal agents.

The treatment of hysteria, says Fleury, is certainly one of the most beautiful triumphs of rational hydrotherapy. The eminent clinician, A. Becquerel, writes: "During three years I have treated all cases of hysteria—hospital and private—by hydrotherapy, and I may say, with assurance, that every case yielded to the treatment; however it requires three to six *months*. Hydrotherapy replaces all other remedies."

From the Montefiore Home we have discharged three cases cured who had been admitted because they had been pronounced incurable.

In *chorea* I regard the treatment incomplete, if the application of cold water in some form is omitted. During the past year I have completely restored two little girls who had been treated in vain, by medications alone, by daily ablutions with water at 65° and large doses of Fowler's solution.

From the time of Priessnitz, who, under the eyes of reliable medical observers (one of whom, Schedel, reports the case), restored a young English lady of sixteen years, suffering from chorea of two years' standing which had resisted all medicinal treatment, hydrotherapy has again and again been successfully invoked. We require here the active impact of very cold water by the douche, which should however be gradually attempted in timid patients. Duval regards it as the best treatment of chorea. He applies the cold douche to the *spine* and the most *agitated* parts, followed by active friction.

In various forms of neuralgia hydrotherapy has afforded many triumphs. In my own personal experience sciatica has yielded more readily than other forms. The patient is wrapped in a dry woolen blanket; pieces of old blanket 2 x 4 feet, doubled, are thoroughly wrung out of boiling water by means of a wringer. These are, after lifting the blanket, closely applied to the affected limb over the region of the nerve; they are rapidly changed until the parts become thoroughly congested and the patient is bathed in perspiration.

This treatment continues about half an hour, and is equivalent to a Turkish bath. The blanket is now removed successively from various parts of the body, beginning with the affected limb, and these are rapidly washed with water at 65° F., and dried. By this treatment I have succeeded in overcoming some of the most unyielding cases of sciatica, acute and chronic.

In *chronic cases* in which the general health is depreciated, the general tonic treatment, by cold ablution, douches and plunges, is indicated. Duval, to whose magnificent book on practical and clinical hydrotherapy I shall have occasion to refer frequently, applies the cold douche or rain bath, sometimes preceded by the sweat bath. From his large number he details six remarkable recoveries, giving, as is his wont, the full histories, containing the name of the physician who sent the case to him.

His treatment will be made clear by the following abbreviated history. Patient sent by Sir Andrew Clark, of London, on the 16th of May, 1867. A lady, æt. 34 years, was attacked by lumbago in January. Pain passed down into the legs and thighs. After various methods of treatment, including blisters, our honorable confrère decided to appeal to hydrotherapy. When I saw her the leg was flexed upon the thigh; she had to be carried to the salle de douches. She first received an ablution with water at 24° (75.2° F.). On the next day the same at 18° (64.4° F.), followed immediately by a sprinkling douche of two minutes, passed over the entire body, especially the left leg, with water at 11° (51.8° F.). On the next day a rain douche of one and one-half minutes, followed by a jet upon the most painful points with water at 11°. This was continued until the 21st without sensible improvement. On the 28th a hot-air bath preceded the douches. On the next day she pronounced herself improved. Under this treatment she convalesced, and was discharged cured on the 28th of July.

In all types of *chronic neuralgia*, unless they be of organic origin, the therapeutic resources have not, in my opinion, been exhausted until a thorough course of hydrotherapy has been adopted. Those cases especially which have proved refractory under ordinary medicinal treatment should be subjected to the best hydriatic methods adapted to them. As many of these cases are connected with anæmia and chlorosis, the treatment addressed to these complications frequently restores the patient's health.

If there be one condition in which the tonic effects of hydrotherapy are pronounced, I may say, that condition is functional anæmia. The mode of action in this malady has been referred to at length in the able work of Putnam-Jacobi, and its practical utility has been demonstrated by incontestable clinical evidence.

For many years I have been in the habit of prescribing cold ablutions, while the patient is still warm from bed, as a prominent element in the treatment. This simplification of the methods adopted by special hydrotherapists, like Fleury, Winternitz and Duval, has served me so well that I must insist on its value. I might give you numerous observations on the subject, cases in which all the most valued medicinal and hygienic measures have failed, until this simple auxiliary was added and changed the entire aspect of the case. Even in poor servant girls, in whom anæmia and chlorosis are so common, who are sometimes brought to me by their sympathetic mistresses, with ashen faces, cardiac bruits, glassy eyes, etc., an astonishing change has been wrought by simply adding cold ablutions to the iron or other medication. It will not suffice, however, to tell an anæmic girl, "You must bathe in cold water every day." The importance of the shock from the brief impact of cold water must be impressed upon them, and the physician should prescribe the temperature of the water. In the early Summer months, when the water is 70° to 75° F., and the air not much warmer, the shock will be slight. Ice must be added to a basinful of water, or several basinfuls should be precipitated over the shoulders and body from a height, in order to compensate by the mechanical effect for the absence of temperature difference.

In Winter my usual prescription is to stand in sufficient warm water to cover the feet, and after turning on the cold water, to catch it up with the hands or with a small tin pan, and dash it over successive parts of the body. Rapid drying and friction must follow. After the patient becomes accustomed to the cold water, I advise a plunge into a tub three-fourths full of water not less than 55° F., nor more than 65° F. Its duration should not be longer than is required to thoroughly wet the entire body. This simple substitute, which, like others mentioned, I have introduced to replace the more complicated hydriatic procedures found in special institutions, will avail in a large proportion of cases. The more obstinate cases must be subjected to the skilled applications of hydrotherapy. An illustration of the latter method is furnished in the following abbreviated history by Duval:

Mr. le dr. Simon sent to us, on the 12th of October, 1876, M. X., æt. 25 years. Addicted to a sedentary life and from other causes, he became very feeble, with difficult digestion. After having in vain tried iron, tonic wines, exercise, etc., Dr. Simon recommended a hydrotherapeutic course. The latter was begun by a rain douche of ten seconds, with water at 9° C. (48° F.), followed by dry friction. In the evening the same treatment; cold food and water as drink. No change of treatment was made for a month. He was now a little better. The douches were prolonged to twenty seconds, and we added a jet douche of half a minute upon the whole body, finishing upon the feet.

On the 28th amelioration was marked, the head became clear, the appetite improved; the strength returned, and also his vivacity.

This treatment was continued until the 11th of January, 1877, when he left us entirely transformed and happy to live. We have seen him twice since that time quite well.

Duval cites twelve histories, selected from a large number in which he details similar treatment varied however, according to the type of anæmia and condition of the patient.

In the physiological portion of my paper, I have referred to the scientific accuracy with which the improvement in the blood has been demonstrated. Winternitz, too has in numerous cases of chlorosis and anæmia proven with Fleisch's hæmometer that the oxyhæmoglobin of the blood was rapidly and considerably increased by hydriatic procedures.

When anæmia is dependent upon the cachexia of organic disease nothing permanent can be accomplished, of course. No one recognizes this fact more than the scientific hydrotherapist. The fact remains positively demonstrated, however, that from the average of cases submitted to the treatment, a large proportion gains in weight, and improves in general condition. Winternitz has carefully recorded the weight of 2400 patients of all kinds at his private institute in Kaltenleutgeben, of whom 56 per cent. gained weight. This is the result of improved appetite and digestion hence increase of food consumption, hence a progressive metamorphosis. In order to obtain the effect the *rule should be:* (1) not to apply a more powerful thermic mechanical nerve excitation, then the respective organism is capable of bearing without excessive reaction, and, (2) to so graduate the heat abstraction that the weakened organism may restore it promptly and without excessive exertion. For this reason it is important to accumulate heat by dry or wet packs, or by previous warming in bed or by exercise, or a glass of hot milk, or tea, or toddy a few minutes prior to the application of the cold. These will aid in bringing on reaction and preventing loss of heat in delicate persons. The reactive effect should be watched in the improvement of the pulse and its increase, rosy hue of the skin, and general invigoration; it should not fatigue very much.

For this purpose I have found the dripping sheet very valuable, as follows:

A skilled attendant dips a linen sheet into water at 65°; and wraps it over the patient's body while the latter stands in warm water. The arms are not covered. By brisk rubbing with the flat hand on the outside of the sheet in which the patient assists, the peripheral vessels are dilated and reaction is more rapidly induced when the patient is rubbed down with a dry sheet afterwards. This is the method I have adopted in the Montefiore Home, with satisfactory results as will be seen.

While on the subject of anæmia, I desire to refer to the fact that in diathetic diseases, as gout and rheumatism, in which the anæmia is a manifestation of defective nutrition, marvels of restoration, as Prof. Semmola justly says, "may be accomplished by the skillful adaptation of cold water to the case."

This subject is too broad to be here entered into as freely as I should wish.

Suffice it to say that clinical data from reliable sources are my warrant for this strong statement. Ziemmssen tells us after describing the sheet procedure in the prevention and treatment of tuberculosis, "the great advantage of this rubbing down, which may be made in loco, without expense and whose good service may be enjoyed for months and years, is of extraordinary significance in daily practice especially among the poor."

Winternitz dwells with his usual clearness and scientific precision, upon the reasons of the improvement obtained in phthisis by hydrotherapy. He quotes Dettweiler, whom you all know as the most successful phthisitherapist, in its favor. He applies continuous moist compresses to the chest, covered by dry flannel, in most cases. For the hectic fever he uses the wet pack followed by rubbing in the wet sheet or the rain bath of one minute. Among 169 cases of phthisis of various types treated at his institute since 1874; 76 per cent. gained in weight. The cases are given in detail, and the result shows that in 58 cases of florid phthisis with hectic fever in 17 a cessation of the process was obtained. In the majority of cases not improved locally, the general condition, appetite and strength were enhanced, the fever and sweating diminished.

At The Montefiore Home which is a hospital whose rules forbid the admission of any *curable* disease, the cases of phthisis are of the most pronounced types, usually refused at other hospitals. Even among these desperate cases, all of which have usually had the prevailing medicinal treatment, the result of hydrotherapy has been striking, as a few brief histories for which I am indebted to the efficient senior house physician, D. L. Ettinger, will show.

G. S., æt. 28 years, consolidation of apex, front of right lung, admitted December 23, 1888, with pain in chest, severe cough, yellow expectoration, severe chills followed by fever and sweating. Dry pack, cold wash off, succeeded later by wet sheet. Result, entire abatement of symptoms; no physical signs of consequence now. Discharged May 1, 1889 (weighing 149 pounds), at his own request.

A. L. Right apex lesion—cold wash off, water at 65°, followed later by wet sheet. Marked improvement in all symptoms. Weight increased under hydrotherapy in two months, from 124 pounds to 134½ pounds.

H. F. Left upper lobe, marked emaciation, extreme anæmia, cough, expectoration, repeated hæmoptysis, weight, 95 pounds—arsenic, creasote, cod liver oil. Cold wash off (65° F.) daily after blanket pack. Complete disappearance of hæmoptysis, almost no cough, no fever, presents picture of health, weight 104 pounds, no räles, area of dullness diminished.

N. R., æt. 37 years. Right apex lesion—sick four months with cough, expectoration, loss of flesh, hæmorrhages and fever; very feeble, anæmic, emaciated, T., 102.2°; P., 110; R., 31; weight 103½ pounds. Severe hæmorrhage directly after admission. Did not improve from May 19 to June 10, when daily cold wash off was begun. Improvement was rapid, anæmia disappeared. Discharged at her own request, with a gain of seventeen pounds in weight.

Lillie M., æt. 12 years. Double mitral lesion. When admitted, extremely feeble, anæmic and hopeless. Received cardiac tonic, iron, cod liver oil (all of which she had before admission), wash off at 65° daily, succeeded by wet sheet. Is now in excellent spirits, able to walk to public school daily.

Chronic Rheumatism and Gout.—These most obstinate maladies have long been eloquent witnesses to the value of hydrotherapy. The immense number of cases cured by Priessnitz, many of whom belonged to the highest ranks in England, France and Germany, spread the reputation of hydrotherapy far and wide among the lay people. The triumphs of the German peasant were observed by an eminent German physician, Schedel, who communicated them to the profession. These cases so often revert to the empirical hydropaths, after prolonged and ineffectual medicinal and dietetic treatment, that they form the largest contingent of patients, from whom the empirics derive the greatest reputation and financial results. In France, however, such cases are usually sent to men who, like Duval, are educated hydrotherapists. The Montefiore Home Report for the present year will show two cases of chronic rheumatism cured, both of whom came to this institution, like all other cases, to spend their last days in comfort.

Constipation is one of those minor functional ailments which give us no end of trouble. After failure of medicinal agents, I have obtained such excellent results from hydriatic measures, combined with faradic electricity, that I am tempted to make a brief reference to a few cases for illustration.

M. G. (for whose history I am indebted to the courtesy of Dr. Ettinger, of the Montefiore Home), presented history of lead poisoning, being a painter. Complains of marked abdominal distension, indefinite pains; is sallow and anæmic; anorexia and severe constipation are his most pronounced symptoms. The latter has resisted all medicinal measures, before and after entering the institution. He is regarded as a hopeless invalid by all his medical attendants, and leaves his family to spend his remaining days in the Home.

March 15, 1889, I had him weighed and ordered dry pack half an hour, followed by wash off at 65° F. daily. His weight is 139 pounds. On the 15th of March, hot fomentations to abdomen while he lay in the blanket pack, were applied frequently until his entire body was enveloped in perspiration. This was followed by rapid but gradual ablution with water at 65°, drying and friction. An enema of water at 45° F. (six ounces) was administered before pack and retained. This treatment was continued daily, his bowels being emptied by large warm enemata.

April 1st. Girth diminished; abdomen soft; still requires large enemata.

April 3d. Pill aloes and mast., one before each meal, without effect on bowels for three days.

April 10th. Entire disappearance of abdominal swelling; cold enema is retained; bowels open (without enema) once or twice daily; takes only one pill at bedtime.

May 1st. Discharged by his own request, cured; weight 149 pounds—a gain of ten pounds in six weeks.

M. A., æt. 13 years, inmate of New York Juvenile Asylum, recorded by Mr. Henry Carpenter, Student of Medicine. Suffered from constipation always. Had taken magnes. sulph. and other laxatives, also cold baths and massage to improve general condition. Four comp. cath. pills were given without effect; a second dose was followed by a scanty stool. Cascara without effect. Her appetite is poor. On the 23d of August I ordered her sent to the hospital for observation, together with another similar case, which proved to be a malingerer.

All medication was stopped; an enema of ℥vi of water at 65° F. was given, to be retained once daily, and a fairly strong faradic current over colon for twenty minutes, A linen compress, wrung out of water at 60° F. was constantly worn, renewed three times daily, after a wash off. A small stool followed an hour after first cold enema; on the second day it followed four hours after enema. A rash appeared under the compress on the third day. Current was increased. On the fifth day she had the first normal stool. Appetite began to improve. This was produced by the cold enema on the twelfth day; it was now continued every alternate day for two weeks. She is now in perfect health and her bowels are regular. These enemata of six ounces of cold water, it should be noted, do not act mechanically, but as stimuli to the innervation of the intestine.

An illustration of the *tonic and sustaining* effect of cold ablutions upon the nervous system under severe trial, is furnished by the case of M. E., a professional nurse, the hopeless character of whose case brought him to the Montefiore Home for Morphine Habit, and consequent complete enfeeblement, with spastic contractions of the knee-joints. He was a pitiful object, emaciated to the last degree; pulse 150. The quantity consumed by the man daily reached two ounces Magendie's solution hypodermically. In the course of three months this was slowly and gradually reduced, while the patient's strength was sustained by good food, stimulants and cold ablutions after dry packs. After many fluctuations, he is now in excellent condition; his face is full, his eye bright; pulse 86, and his morphine habit entirely removed since July. The spastic contractions have yielded, so that he is able to move about on crutches.

The tonic effect of hydrotherapy, so well illustrated in this case, that it was apparent to all the visiting staff, is clinically established by the general results in the Montefiore Home for Chronic Invalids. This is really a home for incurables, but does not bear that title, because it would be equivalent to Dante's inscription, "They who enter here leave hope behind." It is a positive rule of the institution that no case be admitted that has not been pronounced incurable by other hospitals or phsyicians, and whose incurability is not vouched for by our admitting physician. The benevolent gentlemen of the visiting committee also satisfy themselves personally of the facts, and yet among these desperate and hopeless cases the last reports records six cured, thirty-five improved; eight have returned to their homes and occupations. Can clinical testimony be more convincing?

Time forbids my entering upon that most fruitful of all fields for hydrotherapy—the febrile diseases. In these the third method of treatment referred, viz., the arming of the patient for the battle with disease is illustrated.

As I have already spoken and written a good deal upon this subject, I must complete this rapid review by merely referring to the fact that statistics, whose sources are unimpeachable, have demonstrated that *the mortality of typhoid fever has been reduced from twenty-five per cent. to two per cent. by the systematic bathing of Ernest Brand's method.* I am glad to learn that Drs. Flint and Dana have lately introduced the method into their divisions in Bellevue Hospital, and that Dr. Peabody uses it in the New York Hospital.

The latter emphasizes one point that cannot be too often reiterated. He says that "cold sponging in many cases is wholly inefficient. Many lives have been lost by a timid temporizing with this modification of bathing." This is but too true! I desire to reiterate the necessity of implicitly following an exact technique in hydrotherapy. Wrapping a typhoid patient in a sheet and sprinkling her with ice water, as was done to my knowledge in two Metropolitan hospitals by able gentlemen, who are teachers of medicine, *is not cold bathing.* They reduced the temperature, but the patient died.

The bath must be adapted to each case, and the fact should never be lost sight of that *its object is not to reduce temperature*, but *to refresh the nervous system* and enable the organism to withstand the lethal influences at work in the regular progress of the disease. As an illustration, I may mention a case now under treatment in my service at the Manhattan General Hospital. I found him in the fifth week of a typical case, after having had hæmorrhage and pneumonia, with a feeble rapid pulse, temperature ranging from 101° to 104°, mental confusion; sluggish peripheral circulation; altogether an unpromising case. The usual bath, at 65° F., for fifteen minutes, would have sent him into an irremediable collapse. The nerve centers required arousing and refreshing. I ordered a sheet partly wrung out of water at 70° to be wrapped around him for ten minutes, and covered by a blanket and followed by an ablution with water at 65°. Temperature was reduced to 101° by this procedure; he became brighter; compresses wrung out of water at 70° F. were kept on his abdomen as long as his temperature was above 102°.

Patient has had no delirium since first wet sheet, to which he objects most strenuously, however.

Gentlemen, craving your indulgence for having so long detained you, I must now bring this imperfect sketch of hydrotherapy to a close. I trust that in this plea for its practical utilization, I have shown that modern hydrotherapy is no longer an empirical method. Though of such parentage, and nurtured into active life under such environment, its aims to-day are definite, and it explains every process upon well-proven premises. This is science in its true sense; this is the goal of medicine for which ages have striven in vain; a goal though not yet fully attained and probably not attainable, which is nevertheless so replete with promise, that he who will strive in the same direction will be gratified by the result of his labors. This goal has not been reached in the treatment of disease, because hitherto the men, who like Hippocrates, Asclepiades, Hufeland, Hahn and Currie, who realized the empirical value of water, were more or less in the dark regarding the organic processes of life in health and disease. The grand physiological and chemical discoveries of the present time have enabled men like Winternitz, Delmas, and others, to place hydrotherapy on a rational basis, so that to-day we may say with Plohn, "As in no other department of medical activity, we find here a method whose advantages have been individually and physiologically tested and adapted to the laws of the living organism, to be converted into a rational curative measure for special purposes of application; whose therapeutical results are the more reliable since they have been often corroborated by empiricism, and prompted by a spirit of impartial and fruitful research. That which medicine of the nineteenth century has struggled to attain since it awoke from the desperate period of absolute skepticism—namely, practical, prophylactic and therapeutic action, based upon the results of theoretical research in its whole extent, thereby being in a position to give the practical physician that security of which the physicist and chemist boasts, all this hydrotherapeutics is on the way to accomplish."

In conclusion I desire to reiterate, however, what I have said before, that I do not regard hydrotherapy as a universal measure, which will displace the well-tried medicinal remedies, whose value has been carefully tested by able and conscientious men, and which I would be the last man to dispense with. But I would urge upon you to test it fairly and fearlessly. You will find it an auxiliary of no mean power, especially in those trying cases which have baffled your best directed efforts.

SELECTIONS.

NOISY RESPIRATION IN CHILDREN. By Dillon Brown, M.D., New York (In *Archives of Pediatrics*).

This symptom is a prominent feature of one of the most fatal and dreaded diseases of childhood—laryngeal diphtheria—as well as of one of the mildest and most frequent—spasmodic laryngitis. It is common to many diseases in which the indications for treatment are directly opposed to each other, and it is met with in a certain number of cases in which a fatal result will ensue unless a correct diagnosis be made and the proper treatment carried out. Hence the importance of making a careful examination cannot be overestimated; and this group of diseases includes so many conditions that closely resemble each other that it is of the greatest necessity to arrive at the diagnosis by exclusion.

In the great majority of cases this symptom is caused by some obstruction during respiration to the free passage of air through its natural channels. This may be the result either of disease or foreign bodies in the air-passages, or of changes in the neighborhood of them, which produce pressure either upon the nerves or upon the air-passages themselves. It is true that we meet a stertorous respiration in some cerebral lesions, a moaning expiration in pneumonia, frequent sighing and irregular breathing in tubercular meningitis, a short grunting respiration in vertebral caries of the dorsal and lower cervical region, and a loud blowing sound when there is a direct opening into the larynx or trachea; but there should be no difficulty in excluding these diseases, as well as those cases of slight nasal obstruction which produce snoring during sleep.

There is no excuse for confounding a pneumonia with croup, and it can only be the result of a very careless examination, although the diagnosis may be very obscure if the child is moribund when seen for the first time.

Hysteria is apt to simulate a great variety of diseases, and often gives rise to much difficulty in diagnosis. Its manifestations are so varied that it is only after a careful study of the symptoms of actual disease that a correct opinion can be formed. Hysteria invariably overacts its part and there is a tendency to exaggerate subjective symptoms.

NASO-PHARYNGEAL OBSTRUCTION.

Here we may get many symptoms which are common to obstruction in the larynx and trachea, in consequence giving rise to confusion. In both forms there is the noisy respiration; the dyspnœa, with recessions of the soft parts of the chest-walls on inspiration; the restlessness, the cyanosis, and other evidences of diminished air-supply; the croupy cough, and the increased frequency of the respirations. The differential points are the character of the respiratory sound, which is stertorous and rattling, and of the voice, which is clear, although it has a peculiar nasal quality. Other signs, which indicate disease of the naso-pharynx rather than of other parts of the air-passages, are nasal discharge, excoriations about the mouth or nose, fetid breath, deafness, enlarged cervical or post-pharyngeal glands, pain in the pharynx which may extend to the ears on deglutition, epiphora, and epistaxis.

The diagnosis can usually be made at once and positively by inspection of the pharynx and the nares, although it may be necessary to combine this with a careful digital examination. Unless this is done, a post-pharyngeal abscess or a tumor or foreign body in the nares might be overlooked. When there is disease both in the larynx and the naso-pharynx, as is not uncommon in diphtheria, it is very difficult to determine which is the chief cause of the dyspnœa.

Scalds can be excluded from the history of the case. In *herpetic angina* the apparent pseudo-membrane is easily washed away, leaving the characteristic vesicles and the resulting ulcers of this disease. It runs a very short course, and may be accompanied by herpes on the lips and elsewhere. The lymphatic glands are not involved, and there is seldom any great obstruction to the passage of air unless the larynx is involved. When the respiration is embarrassed in *syphilis* of the pharynx, it is due either to cicatrices or to gummata, both of which manifestations are easily recognized, especially when viewed in connection with the history of the case. In the ordinary *follicular amygdalitis* the tonsils are not sufficiently swollen to produce a noisy respiration, but in the *plegmonous* form, with or without suppuration, there may be a loud snoring respiration, accompanied by the most intense dyspnœa. It is an acute disease, marked by great prostration, and begins with a chill or convulsion and high fever. The tonsils are swollen and red, and this condition extends to the neighboring soft parts—the uvula, the soft palate, and the pillars of the fauces. In some cases the swelling is enormous. The breath is fetid, due to the decomposition of retained epithelial structures within the recesses of the tonsils; there is pain in the pharynx, which shoots up into the ears on deglutition; and there is more or less deafness, which is caused by extension of the inflammation to the Eustachian tube, rather than by pressure upon it. The voice has a peculiar nasal twang which is very characteristic, and the pharynx soon becomes filled with secretions, which interfere with both respiration and articulation.

Glandular enlargement may be present, as well as albuminuria, which occurs in many catarrhal conditions with fever in children. The differential diagnosis between this disease and *diphtheria* depends upon the presence or absence of pseudo-membrane, and there is usually no difficulty in separating the two conditions when fully developed. There may be great difficulty in making an accurate and complete inspection of the pharynx, especially in infants; and the appearances may be masked by the accumulation of a large amount of secretion, which may prevent a good view of the mucous membrane, or may simulate a fibrinous exudation. It may be necessary to wash out the pharynx and free its surface of this mucus and other material before a positive diagnosis can be made.

Retro-pharyngeal abscess can be distinguished without difficulty if a careful digital examination is made, the soft, doughy feeling of the posterior wall of the pharynx being very characteristic. Even inspection may show a swelling in this location, protruding up between the soft parts, and when this disease has been overlooked it is because it has not been thought of on account of its comparative rarity. It is more common during the first year of life than at a later period, and may be due to vertebral caries, nasal disease, tuberculosis, or syphilis; or it may follow scarlet fever, diphtheria, measles and erysipelas.

Constitutional disturbances will be absent if it is the result of a chronic process. Its characteristic symptoms are pain on swallowing or on pressure on the larynx and neck; the dyspnœa is increased on lying down, and when pressure is made on the larynx it is subject to remissions; the neck is stiff and often swollen, and the larynx may be prominent or pushed out of its normal position. The obstruction is on inspiration chiefly, although when the disease is well advanced expiration may be also obstructed. The respiration has a peculiar grating or whistling sound. The voice has a nasal quality, but is usually clear, and the cough is dry, hard, and may be paroxysmal, as in pertussis.

The most frequent varieties of *naso-pharyngeal tumors* are the mucous and the fibrous polypi, the latter of which may grow very large and spread in every direction. Among other varieties are the adenoid vegetations, cysts, sarcomata, etc., and their diagnosis must be made by inspection, although a digital examination may be of great assistance.

There is reported, besides other rare tumors in this situation, the case of a *meningocele*, which protruded through the nasal roof and hung down from the mouth, having passed through a congenital fissure of the palate. Phlegmons, or tumors of the *tongue*, may obstruct the pharynx, as well as the curious congenital affection called macroglossia. In this latter condition the tongue may become enormously enlarged, in one case measuring six and a half inches in length and ten inches in circumference. It may be so large as to deform the teeth and alveolus, or even dislocate the jaw, and it may project from the mouth far enough to reach the episternal notch. In *cut-throat* in which the attachments of the tongue are severed, in cases of *tongue-tie* in which the frænum and subjacent muscles are too freely divided, and in complete *anæsthesia* when its muscular attachments are relaxed, the tongue may be turned over into the pharynx and press upon the larynx, causing suffocation.

Foreign bodies of the greatest variety may become impacted in the fauces or lower part of the pharynx, and consequently interfere with respiration, among the most remarkable cases being that of a live catfish which jumped into the mouth of an adult bather during swimming and became impacted in the fauces. It is said that this is not a rare accident in India.

LARYNGEAL AND TRACHEAL OBSTRUCTION.

Tracheal obstruction unaccompanied by the same condition in the larynx or the bronchi is rare. The calibre of this portion of the air-tract is so great that it requires an intense type of inflammation, or a very large foreign body to seriously interfere with respiration. In the majority of cases a marked degree of stenosis in this location is due either to external pressure or to cicatrical contractions. It is distinguished from laryngeal stenosis by the voice, which is clear, and by the fact that there are no downward movements of the larynx during inspiration, owing to the great elasticity of this tube, which allows considerable motion on itself without displacing the larynx.

The differential diagnosis between naso-pharyngeal and laryngeal disease is usually not very difficult. The characteristic signs of involvement of the larynx are the voice, which is hoarse or absent; the breathing, which, instead of being snoring and rattling, is hard, brassy and croupy, and with each inspiration there is a downward movement of the larynx. In both, the obstruction is solely or most marked on inspiration, but it should be remembered that in a certain small proportion of the cases of laryngeal diphtheria the expiratory obstruction may be the greater, in which case, although the respiratory muscles will be seen to be actively at work, the recessions of the soft parts of the chest walls during inspiration will disappear, and instead there will be an emphysematous condition of the lungs, and during each expiration the chest will become barrel-shaped and swollen. This expiratory obstruction may be due to enlargement of the bronchial glands, which are situated at the bifurcation of the trachea. It is the bronchial glands which are involved in diphtheria of the larynx.

Again, the disease may be confined to the subglottic region of the larynx, and this is especially frequent in ascending croup. In this event the voice will be unaffected, but all the other signs of laryngeal stenosis will be present. The characteristic of these cases is the rapid increase of the obstruction, often proving fatal in a few hours, and before the inflammation has had time to extend to the vocal cords.

A laryngoscopic examination may give brilliant results, and in tumors and in some chronic lesions a positive diagnosis cannot be made without it in a certain number of cases. However, in the great majority of cases this is not only not necessary, but it is almost impossible, and may be the means of doing great harm.

The history of the case will exclude the *laryngitis* and *œdema of the glottis*, which is caused by scalds. It results in such intense inflammation that the mucous membrane is covered with an exudation that closely resembles pseudo-membrane.

The peculiarity of this type of injury is that evidences of stenosis do not appear until a variable period after the scald, during which interval there is such a complete absence of bad symptoms that the surgeon may be led to believe that the laryngeal tissues have escaped serious harm.

Laryngeal diphtheria is the important disease of the larynx in children. When there is also diphtheria in the pharynx or nares, the diagnosis presents no difficulties. In such cases the presence of a whispering voice or of aphonia, a croupy cough and respiration, and a laryngeal stenosis which is growing progressively worse, positively indicate membranous occlusion. When confined to the larynx, unless membrane has been coughed up, it may be difficult to exclude *stridulous laryngitis*, or false croup, which is a catarrhal laryngitis with superadded spasm.

The characteristic phenomena of laryngeal diphtheria are the absence of fever at the onset of the disease; the muffled whispering character or the absence of the voice; the constant presence of the stenosis, which in the beginning is very slight, but grows progressively worse and soon involves both inspiration and expiration; the rough sawing respiration, which is not necessarily very loud; the croupy cough, and the albuminuri which is so often present without fever.

On the other hand, false croup has a temperature of 102° to 105° at its onset, and all the symptoms reach their greatest intensity more quickly and seem more formidable. The attack comes on suddenly, and usually in the night during sleep. The voice is hoarse and loud, the cough is barking and sonorous, the inspiration is accompanied by a loud whistling stridor, while the expiration is comparatively noiseless, and albuminuria, is usually absent, although it may be present, as it can in all catarrhal conditions in children.

During the intervals between the attacks the voice and cough are croupy, but the respiration is quiet, unless the catarrh has extended to the bronchi, in which case there may be constant obstruction.

A *simple laryngitis* is rare in children, except as the result of syphilis. The symptoms are identical with those of false croup, without the spasmodic element, and the diagnosis may depend upon finding other evidences of syphilis, or upon obtaining a laryngoscopic examination.

A chronic form, which is very obstinate, may follow measles and the acute diseases of the larynx, but it seldom interferes with the respiration. *Œdema of the glottis* without inflammation is sometimes a symptom of acute nephritis, especially the form which is so frequent a sequel of scarlatina. Usually, however, it is accompanied by some inflammation of the larynx, and is the result of a scald, or it is a complication of one of the acute specific diseases.

The obstruction is entirely upon inspiration, and much light may be thrown upon the diagnosis by a digital examination; for, if the finger is trained, the thickened epiglottis and ary-epiglottic folds may be often felt.

Herpes is said to sometimes invade the larynx and embarrass the respiration. The presence of herpes elsewhere may aid in determining its character, but it seems to me that even a laryngoscopic examination would fail to give us a positive diagnosis, except under the most favorable circumstances.

Tubercular laryngitis is rare. It is a chronic disease, and is accompanied almost without exception by involvement of the lungs. The main features are the voice, which is thick and husky, not whispering, as in the adult; the absence of pain, either on pressure or on deglutition; the cough, which is little altered and has no metallic or ringing quality; the hoarse inspiratory stridor, the elevation of temperature, and the presence of physical signs of phthisis in the chest. There are usually ulcerations, which have a characteristic location and appearance, and therefore the laryngoscopic examination is of great value. In *laryngismus stridulus* we get a pure spasm, arising from reflex irritation. It is often associated with rickets, and usually occurs in infants. As soon as the spasm relaxes, the breath is drawn in with a crowing or hissing sound, very much like the whoop of pertussis, and the attack is over, or possibly the child may vomit or cry. At the same time there may be spasm in some of the voluntary muscles, *e. g.*, the fingers may be clinched upon the thumbs and the toes flexed under the feet. The attacks are short, but may be frequent, and during the intervals the child is quiet. There is no fever and no hoarseness.

When a *foreign body* gets into the larynx it may become lodged in the chink of the glottis or in a ventricle, in which latter position it may cause no inconvenience. It is not a rare accident, and includes the most varied list of articles. The most characteristic symptoms are the sudden onset of the dyspnœa, the violent convulsive cough, and the feeling of suffocation, which appear, not at night as in spasmodic laryngitis, but during the day, when the child is awake and at play. The voice is suppressed, the dyspnœa is continuous or with only slight remissions, and there is pain which is located at some fixed point in the air-passages, most frequently in the larynx, but sometimes in the trachea or lungs. The testimony of the parents may throw light upon the subject, both as to its presence and its nature. When the body remains in the trachea it is usually movable, and the only symptoms would be a paroxysmal cough and a peculiar flapping noise heard both at a distance and on auscultation, in the direction of the larynx, which is caused by the movements of the body during respiration. A very unique case is reported by McNamara, in which a whistle made from a plum stone became lodged transversely in the lower part of the larynx, and gave rise to a whistle as the air passed through it in expiration. The only inconvenience was an occasional suffocative cough. Foreign bodies in the œsophagus may press upon the larynx or trachea, and give rise to the same train of symptoms as when present in the air-passages. The differential points are the voice, which is usually unaffected, although it may be hoarse, and deglutition, which cannot be accomplished without causing pain or producing cough and regurgitation of the food through the nose and mouth. The œsophagus may be explored by a bougie, and in some cases a foreign body may be detected even with the finger.

Tumors of the larynx and trachea are usually polypoid, although many other kinds are met with in this location—papillomata, fibromata, cystic tumors, myxomata, lipomata, angiomata, and sarcomata. They are of slow growth, and the voice is affected for a considerable time before the breathing. They are easily distinguished from the acute diseases of the larynx, but an examination with a mirror is absolutely necessary for a differential diagnosis between each other.

There is a large number of diseases which interfere with respiration by *external pressure* upon the air-passages, and their most characteristic symptom is an increase of the dyspnœa when in the horizontal posture. Retro-pharyngeal abscess and tumors and foreign bodies in the œsophagus have been considered. In *suppuration about the larynx* the symptoms simulate a retro-pharyngeal abscess—the orthopnœa, the rattling, stridulous inspiration and comparatively noiseless expiration, the voice and cry hoarse, the cough rough but without clangor, and the pain on deglutition, with possibly the return of the food through the nose and mouth. It differs from the fact that no pharyngeal swelling can be detected even by the finger; the larynx may be prominent or pushed out of the mesial line, and there is some swelling in its neighborhood, which feels more as if it contained air than fluid. It is an acute disease and runs a short course. External pressure upon the air-passages may be made by any of the following diseases, but their diagnosis presents no special difficulties: erysipelas and phlegmons of the neck from various causes; cervical tumors; tumors and phlegmons in the posterior mediastinum; enlarged lymphatic glands; aneurisms; and tumors and hypertrophies of the thyroid gland and of the thymus gland. This may also occur in *dislocation of the clavicle* backward at the sterno-clavicular joint, which may be the result of violence, or has occurred spontaneously in connection with the chest-deformity of vertebral caries and of rotary lateral curvature of the spine. In *empyæma* the trachea may be so greatly obstructed that both expiration and inspiration are impeded. This occurred in a patient of Dr. Joseyh O'Dwyer's, which I had the pleasure of seeing. Both respiratory sounds were loud and croupy, and there was extreme dyspnœa. All these symptoms immediately disappeared upon removal of the pus from the chest, and the child made a good recovery.

Pressure upon the pneumogastric or its recurrent branch by enlarged bronchial glands is characterized by spasm, but is always preceded for some time by hoarseness and paroxysmal cough. Dr. J. Solis-Cohen says that the epiglottis is apt to be incarcerated in the larynx during the most violent paroxysm of spasm of the glottis, and that suffocation may be thus produced. It can be detected by a digital examination. The peculiar hiccoughy respiration of *chorea* *of the larynx* and the loud whooping inspiration of *pertussis* require only to be mentioned.

In *fracture of the larynx* the history of an injury may give valuable aid, but a positive diagnosis can be made only when crepitus and motion of the fragment is detected. An examination should always be made with the finger passed over the dorsum of the tongue. Locally there is severe pain on pressure, and swelling due both to emphysema and infiltration of blood and serum. Ecchymoses may appear. This injury is associated with great pain on speaking, on swallowing, on moving the tongue, and on opening the mouth. The articulation is indistinct and the voice may be hoarse or absent. There is marked dyspnœa, which is increased on protruding the tongue, and death may be due to suffocation. If the mucous membrane be pierced by one of the fragments, there will be a hæmorrhage and bloody expectoration. In *paralysis of the abductor* muscles of the glottis, inspiration only is obstructed. It is almost exclusively a sequel of diphtheria, and in young children may produce asphyxia in a very short time.

OBSTRUCTION IN THE BRONCHI.

In the respiratory diseases located in the bronchi, and in those which cause pressure upon the bronchi, there is, as a rule, greater obstruction to expiration than to inspiration. Again, the respiratory sound is diminished only on the side to which the obstructed bronchus goes; while, on the other hand, when the obstruction is above the bifurcation of the trachea, the respiratory sound, although diminished, is of equal intensity on both sides.

The wheezing respiration of some forms of *bronchitis* and *œdema of the lungs*, which can also be detected by placing the hand on the back, should be easily made out. *Chronic emphysema* is very apt to be accompanied by a wheezing breath-sound, a husky cough, and attacks of dyspnœa which are asthmatic in character. This emphysema is more probably the result of the asthmatic attacks, which in children, almost without exception, are not primary, but depend upon other conditions, in most cases a chronic interstitial pneumonia or enlarged bronchial glands. The chest is distended in the upper regions, and there is hyper-resonance on percussion. The area of cardiac dullness is diminished, and the liver may be displaced.

There is both an *acute* and a *chronic membranous bronchitis*, and when confined to this location a positive diagnosis can be made only when bronchial casts are coughed up, although, when the membrane becomes loose, a peculiar squeaking or flapping respiration is heard.

In *spasmodic asthma*, which in the pure form is rare in children, there is marked dyspnœa during the attack, and it is characterized by an excited action of the muscles of respiration, with heaving of the chest; but the obstruction is on expiration, and the recessions of the soft parts of the chest during inspiration are absent, and the chest remains fully distended and moves but slightly during each breath.

There is a marked spasmodic element, and the severity of the suffering is out of all proportion to the physical signs. The expiration is prolonged and laborious; there is but little increase in frequency of the breathing; there is no laryngeal stridor, and the temperature is normal. The cough is short and dry, but not paroxysmal. It is often the result of whooping-cough or catarrhal pneumonia; the child usually suffers from pulmonary emphysema, and the attack occurs as a consequence of a fresh catarrh. There are very few cases in young children in which direct pressure upon the bifurcation of the trachea or a main bronchus can be excluded.

Enlargement of the bronchial glands is not rare according to Eustace Smith. These glands are situated at the bifurcation of the trachea, behind the upper bone of the sternum and a little below it, and also accompany the bronchi into the interior of the lung. They may cause considerable disturbance by pressure upon the blood-vessels, the air-passages, and the nerves of the chest. Evidences of pressure upon the vena cava or either innominate vein is shown by some lividity of the face, epistaxis or hæmorrhage from the lungs, and prominence of the superficial veins of the temples, neck, and front of the chest. This pressure causes a venous hum, and, if the glands are not sufficiently enlarged to press upon the vein, it can be induced by throwing the head backward, if the glands are movable. Pressure upon the nerves is shown by hoarseness and a paroxysmal cough which resembles pertussis. Pressure upon the trachea produces a more or less spasmodic dyspnœa, which may be intense, occurs most frequently at night, and usually follows a catarrh or cold. There is an expiratory stridor, which is generally intermittent. When the glands are in contact with the chest-wall there will be dullness over the first bone of the sternum, which may extend for some distance on each side and below. Auscultation gives a very characteristic loud, blowing sound, produced by transmission from the bronchi through the glands. It is most marked at the apices of the lungs, although it may be heard loudly over the whole of one or both sides of the chest. It is less high-pitched and metallic than the sound heard in cases of pulmonary consolidation and excavation, and upon opening the mouth it is generally modified in intensity or may disappear entirely. When a *foreign body* gets into the bronchi there is usually a sudden attack of dyspnœa and spasmodic coughing, and there may be periods of comparative comfort between the paroxysms. It is marked by expiratory obstruction, a fixed pain referred to some part of chest, often an inability to lie upon one side or the other because it increases the dyspnœa, and a cough which resembles pertussis, and may be accompanied by a peculiar clicking noise. The respiratory murmur is diminished or suppressed upon one side, and the physical signs are those of collapse or surgical emphysema. It may result in a catarrhal pneumonia, gangrene of the lung, or a chronic phthisis.

GENITAL IRRITATION IN BOYS. By Alexander Davidson, M.D., Glasgow.

The personal hygiene of the human infant and that of the puppy present strongly contrasting features, which are not by any means creditable to our superior intelligence. The tongue of the canine mother is constantly engaged in removing from its offspring the excretions adhering to it at birth, or as a result of urination and defecation, and the genitals particularly are objects of grave maternal solicitude. Quite a different plan is followed in the case of the human infant. It is washed certainly, but in the process the genitals receive no more attention from the nurse than the corners of a room from a lazy housemaid. It is then packed in diapers, so that fæcal and urinary discharges are preserved in accurate contact with the hitherto neglected genitals, and thus it continues, till lapse of time, fetor or caprice, suggests to the attendant the possible propriety of a change. If to those be added the frightful uncleanliness of mothers in the lower ranks of the working class—although unfortunately this is not peculiar to them—much of the great mortality of childhood, and the moral and physical decrepitude of those surviving that period, may be accounted for in a manner as convincing as it is unsatisfactory. A momentary comparison of the male and female genitals during infancy, shows that boys labor under greater physical disadvantages than girls, and explains the limitation of the present question to genital irritation in boys. Thus, the genitals of girls are so prominent that their inflexions are within the observation of the nurse, and the meatus urinarius so close to the surface that the contraction of the bladder ejects the urine almost without contact with the surrounding integument. In boys, the glans penis being, as a rule, covered by the prepuce, the meatus urinarius is concealed, and even under the most satisfactory conditions some of the urine is retained in contact with the mucous membrane of the glans and prepuce. Under ordinary circumstances, this contact of healthy urine may lead to no great evil, but the inevitable acid dyspepsia of infants with its acid urine, sooner or later exerts its influence, and genital irritation occurs.

The mucous membrane and glands are unnaturally excited, while secretions increase and are pent up by adhesions. Thus, the irritation is not only maintained, but intensified. The boy is in a condition of frequent irritation, and seeks to relieve it by purely physical means, as remote from moral influences as the scratching of the adolescent victim of scabies. He rubs himself, but quickly discovers that tugging at the prepuce is much more effectual. Continued pulling elongates it, its orifice contracts—at first spasmodically and later on organically—till finally, in severe cases, the prepuce "balloons out" during micturition, and straining weakens the abdominal wall, and hernia may result.

Case 2 is a striking example of the truth of these remarks. But the fact which I am anxious to emphasize is, that continued irritation of the genitals induces a habit of manipulation which may persist long after the irritation ceases, and which, if retained till puberty, leads to the practice of masturbation in its most odious sense. A recent controversy in the *British Medical Journal* has brought this question into unusual prominence, and some of the statements there advanced are very suggestive. There is a squeamishness shown in referring to the subject at all, and an acknowledged difficulty in acquiring accurate information. I cannot help thinking that, if sufficient notice had been taken of the important part played by genital irritation in the development of this habit, both squeamishness and difficulty would have disappeared. It is rather singular that the average professional mind views with satisfaction the extensive literature gathered around the subject of syphilis, and that the acutest intellects in the profession should find an ever-increasing interest in the study of its multifarious manifestations, whilst this subject of masturbation is described as disgusting, and its discussion carefully avoided. He would be deemed a strange physician who neglected the study of syphilis, or refused to treat its victims, because of its usual relationship to immorality, and yet extraordinary considerations somewhat similar to these seem the only rational explanation of the evident "boycotting" to which the discussion of this practice is subjected. It cannot be denied that, after a certain age, the practice is essentially immoral and disgusting, but I have already indicated with sufficient clearness the conclusion that during infancy and early childhood it is purely physical. This proposition cannot be too strongly insisted upon, since its contradiction is chiefly responsible for the obscurity in which the whole question lies. Parents can give us most valuable information, but if our inquiries suggest that we consider their children "moral lepers," they will indignantly refuse it, and accurate information will become impossible. The practitioner who believes in the purely physical theory of genital manipulation, and clearly expresses his belief at the outset of his inquiries, will never fail to secure the intelligent co-operation of the parents. This, at any rate, has been my experience; for, although the children are usually brought by their mothers, I have never hesitated to investigate in necessary cases, and in none have I wounded maternal susceptibility or womanly modesty. A goodly number have, indeed, come with suspicion of genital irritation already roused by observation of cases which I had previously treated. Here is probably the best place in which to describe briefly a few recent cases:

Case I.—Æt. seven years. Been ailing for a year, and under medical treatment. Previously active, intelligent and healthy. Now he is apathetic, unable to stand or walk, "plays with himself," and suffers from nocturnal enuresis. Prepuce long, orifice contracted, with inflamed edges, and penis very excitable. Circumcised. Nocturnal enuresis at once ceased; in a few days he tried to walk, and within a month walked a mile without support. Former intelligence had then returned.

Case II.—Æt. three years. Double hernia; cannot stand or walk;

always "in doctor's hands." "Plays with himself." Circumcised. In a week or two he began to "walk on the grip," and within a month he could walk alone. Hernia gone at end of three months.

Case III.—Æt. three years. Very rickety and enfeebled. Frequently wakes crying, and is then found grasping his erect penis. Nocturnal enuresis. Circumcised. Nocturnal disturbance entirely ceased, and health rapidly improved. An interesting feature in this case was that, when three months old, he had "inflammation of the bladder," of which the chief symptoms was retention of urine.

Case IV.—Æt. five years. Paraphimosis, with superficial sphacelation. Has been often flogged for "bad habits," Circumcised. Parents believe that he has ceased to manipulate, and his health has greatly improved.

Case V.—Brother of last, æt. eighteen months. Rickety; never has tried to walk; manipulates. Circumcised. The mucous membrane so firmly adherent that it left the glands raw and bleeding. Practice ceased. "Walked on the grip" in a few days.

Case VI.—Æt. four months. Fretful since birth, and seems never to have grown. Has cried incessantly for over a week. Hernia. Circumcised. Crying ceased at once; chloroform may have eased spasm; and weight was more than doubled in a few weeks. At end of two months the hernia had almost gone, and the improvement of health persisted.

Case VII.—Æt. six weeks. Has not thriven since birth. Penis very excitable. Prepuce "balloons out" during micturition, which is only accomplished after much straining. Double hernia. Circumcised. Within a week the mother found the child much heavier to carry, and the father commented upon the great facial improvement. This is a usual result in these cases.

Case VIII—Æt. two years. Double hernia. Health good. Circumcised. The mucous membrane much inflamed, adherent, and retaining much secretion.

The last two cases have been only recently operated upon, and consequently the full results aimed at cannot yet be expected. It is scarcely to be hoped that those who have not pursued this plan can be so impressed with its results that they will entirely accept the conclusions which my statement of them indicates I have arrived at, but the following propositions will receive their assent: (1) Serious health disturbances co-exist with genital irritation. (2) These disturbances cease coincidentally with the removal of this irritation. (3) The method adopted for its removal is safe and unobjectionable, and is, therefore, worthy of experimental adoption. The health disturbances (excluding hernia, which has received sufficient attention from others) may be summarized as nutritional, motor, and psychical impairment, and the acquirement of a habit which aggravates these results, and becomes a cause of moral degradation in the near future. All these results may be ascribed to abnormal excitability of the sexual organs, and no arguments need be advanced in support of the proposition that these results will vary with the age of the child. The arrival of puberty particularly will tend to change their character. A brief consideration of these variations will give an importance to the subject which each may estimate for himself, and may perhaps merit future treatment. The condition of the crossed pyramidal tracts at birth, and for some time after, seems to warrant the conclusion that so far as the execution of volitional impulses is concerned, the infant is impotent, and that the life of its nervous system is in a manner exclusively centered in the medulla and cord (Virchow). But the more perfect developement of the posterior columns and direct cerebellar tracts suggests that, from the first, the infantile organism is influenced by external conditions, so that it acquires the desire and seeks for the power to modify them to suit its conscious necessity. Be that as it may, it seems certain that the higher nerve-centres are gradually brought into relationship with the reflex centres in the cord, and it requires no perspicacity to see the importance of healthy reflex action at the time of the establishment of this relationship. A contrary condition can scarcely fail to delay this natural process, and at the same time react injuriously upon the higher centres. Further reference to this is beyond our space, yet it seems to afford in general terms an explanation of the motor and physical impairment observed in the cases cited; and the nutritional defects may be accounted for in a somewhat similar manner. It has been well said that "given a certain amount of permanently depressed health and rickets ensues." All these cases were rickety.

Enough has been advanced to show that this subject of prepubertal genital irritation is worthy of our serious consideration, and that it is the duty of the profession at large to educate parents up to a higher standard of personal hygiene for their children. But it may be asked "What is to be said of the origin of masturbation during adolescence?" This is not nearly so common as is supposed, and in the great majority of cases is due to the contamination of early manipulators. There are indeed other cases in which boys acquire the habit for themselves. These I account for on the supposition (warranted by observations) that the glans penis at puberty tends naturally to emerge from the obscurity of the prepuce—just as, contrariwise, the female genitals lose their prominence at the same period—and a certain measure of irritation is consequently inevitable. As with the infant and child, the same means of relief are sought, but the results are more serious, because now we have to contend with a developing sexual instinct. Here, again, it would seem that if we remove purely physical causes, we might reasonably hope to diminish this practice, and the only method which seems to me safe and unobjectionable, simple and complete, is circumcision.

I have not referred to the immunity from diseases due to venery in after-life which might thus be aimed at, for this aim can have no place in our practice; but other diseases may be lessened and avoided. In India, for example, I believe it is not unusual to circumcise soldiers for reasons quite apart from venereal, and it is said that in some hot climates the practice is followed more as a sanitary precaution than as a religious rite. The operation is of great historical interest, for it was undoubtedly practiced long before Abraham's time. Apart from other evidences, we cannot but suspect that a nation like the Jews, whose ideas of sanitation were so far advanced as to include the "dry earth" system, adopted the practice as much for its substantial benefits to health as out of regard to religious ceremonial.—*Practitioner.*

THE PORRO OPERATION. Joseph Price, Philadelphia, Penn.

The true Porro operation is, as we know, the Cæsarean section, to which is added the removal of the uterus. At first sight it might be considered, that to perform the Porro operation is to add one capital procedure to another, thus enhancing the dangers and the difficulties, and accordingly increasing the mortality. This is not true; for by removing the uterus, we take away from the Cæsarean section the most important factor in its dangers; that is, the succulent uterus with its incision. Another way of stating the argument is, that the operation is simply a supra-vaginal hysterectomy, with the complication of pregnancy, instead of that of a fibroid tumor. In a paper on supra-vaginal hysterectomy, I have endeavored to show that an uncomplicated operation of this sort, with the extra-peritoneal treatment of the stump, is an operation, under the improved technique, of comparatively little danger. The later operations in Philadelphia alone have gone far to make this position tenable. The operations in the hands of other skillful men also confirm the statement. The results of men without the abdominal instinct have no right to be considered.

Now the complications of hysterectomy, when they involve no important viscus, but are limited to simple adhesions, are not to be feared, with intelligent drainage. I wish to call your special attention to these points in detail, because I intend to use them comparatively. In the Cæsarean section, the danger of hæmorrhage as an ever-present menace is not to be denied. Of course it can be controlled; but it is present, nevertheless. In the Porro operation, the uterus is strangulated at once, thus obviating this complication. Now as an operative procedure, as compared with the Cæsarean section, the Porro operation clearly has the advantage in these essential points: first, in the absence of the danger of hæmorrhage; second, in the extra-peritoneal treatment of the cut uterus; third, in the rapidity with which the operation can be completed. It appears also that even with the bettered results of hysterectomy, the Porro operation ought to surpass them, for the following reasons: first, there are no complications of adhesions; second, there is no implication either directly or indirectly of any important viscus, and accordingly there is less hæmorrhage; third, there is less shock. So far as the technique of the operation is concerned, it is less complicated than that of the simple Cæsarean section, and in its complications far less formidable than the average hysterectomy. The suturing of the uterus, as necessary in Cæsarean section, prolongs the operation and imposes a time consideration of vast importance in all abdominal operations. The factors of uncertainty in the healing of the uterine incision contradict, and in great part negative, all our established ideas of exact surgery. We have here an incision which it is impossible to put at rest. The tissue within the embrace of the ligature is not at rest. The uterine tissue itself is not stable, but is undergoing metamorphosis and degeneration. A suture such as this in any other part of the body would be unthought of by the intelligent surgeon. It is only tolerated here because it is the best that circumstances and anatomical surroundings will permit. Under such conditions the danger of leakage and peritonitis are always present in no small degree, and cannot be minimized. This is not true of the extra-peritoneal treatment of the succulent stump. Here the use of the écraseur is the ideal treatment, because it adapts itself to the conditions, in that it can be contracted upon the shrinking stump, and the hæmorrhage absolutely controlled.

The operative side of the question has thus been conclusively dealt with, I think, and the showing is not unfavorable to the Porro operation. There remains to consider the ethical or, if you please, the sociological side of the question. First, the interests of society in general: when we remove the uterus we sterilize the woman. Have we a right to do so? To answer this we must ask in what light is the pregnant woman to be considered. Is she to be simply regarded as a propagating organism, whose life is in no wise to be considered apart from her procreative power, to which all else must be sacrificed? Are her relations to family and friends of no account compared to this? Is the Cæsarean section, which gives her a possible chance for future child-bearing to the detriment of her present family, to be preferred to the operation which gives her the best chance for future usefulness apart from child-bearing?

Before we answer these questions, the subject must be looked at from the standpoint of the children who might at some future time be delivered by the Cæsarean section. It must be remembered that the dangers of childbirth are here enhanced, and the chances of living greatly diminished. If we then choose the Cæsarean section in order to permit future child-bearing, we are doing so with a knowledge that we are subjecting the mother to its perils without reasonable assurance that this can be compensated for by the value of the life of her child.

Mathematically we are substituting a variable for a constant. The logical deduction from the last statement is, that with a dangerous operation we are not justified in exposing the mother again to its perils when the end attained is in no wise certain to be what is desired.

In other words, the Porro operation skilfully performed is safer than the Cæsarean section, and practically leaves the mother, so far as ultimate results are concerned, in the same relative position to the community as a child-bearing agent.

This answers the first series of questions, for if, with less danger to herself, she is left in the same relative position, it is her right to demand, and the surgeon's duty to perform, the operation which will preserve her usefulness to her family and the community.

ORIGINAL ABSTRACTS.

By Kirkland Ruffin, M.D., Norfolk, Va.

The Surgical Treatment of Typhlitis. By Frederick Treves, F.R.C.S. (From the *British Medical Journal.*)

The term typhlitis is applied to a form of localized peritonitis occurring in the cæcal region, and differs in its general features in no essential from localized peritonitis in other parts of the abdomen. It may or may not spread to the general surface of the peritoneum; it may or may not lead to suppuration.

If it remains simple it may leave scarcely a trace of its existence; but, on the other hand, it may produce adhesions of almost any grade. If it result in suppuration, the pus will gradually be encysted and the abscess may burst through the skin, into the abdominal cavity, or into some neighboring hollow viscus. This form of localized peritonitis differs from other varities in site, in anatomical surroundings, and possibly in causation; and these are the features which modify the treatment. The classification of inflammation about the cæcum into (*a*) typhlitis (proper), (*b*) perityphlitis, (*c*) paratyphlitis, and (*d*) appendicitis is unfortunate and has been shown to be unsound. The following points as to its pathology may be briefly stated:

1. There is no evidence that primary inflammation of the walls of the cæcum exists, independent of catarrh or ulceration of its mucous membrane.

2. Since both cæcum and appendix are entirely covered by peritoneum, a perforation in either cannot lead primarily to suppuration of the connection tissue of the iliac fossa. Primary inflammation of this connection tissue may be safely said to be unknown.

3. Cartarrh of the cæcum may occur in connection with a more general colitis, but the symptoms are those of colitis, not of typhlitis.

4. Ulceration of the cæcum is common. The causes are impaction of fæces, tuberculosis, dysentery, typhoid fever, impaction of foreign bodies, and possibly syphilis. (Cancer of the bowel is not considered.) An ulcer of the cæcum, as long as limited to the mucous membrane, may cause no symptoms, and will in any case not produce the symp-

toms of typhlitis. When such an ulcer has spread to the outer walls of the caput coli, a peritonitis ensues and the typical symptoms of typhlitis of some grade are produced. Any ulcer of the cæcum may lead to perforation. When ulceration is due to fæcal impaction, the perforation appears late and follows upon symptoms of prolonged fæcal obstruction.

5. Perforation of the cæcum as (what may be termed) a primary condition is very rare. Fitz only found three examples (two due to impaction of foreign bodies, and one to "strangulation" of the bowel,) out of 209 cases of typhlitis. The author has met with perforation of the cæcum, preceded by few abdominal symptoms, in a case of tuberculous ulceration of the colon. It is not uncommon to find a ragged aperture in the cæcum when a typhlitic abscess is evacuated; but there is nearly always evidence that the abscess had formed outside the cæcum and had burst into it as it would into any other hollow viscus.

6. Abscesses resulting from mischief in the cæcum or appendix are primarily intra-peritoneal and are encysted forms of suppurative peritonitis. Since the cæcum and appendix are normally entirely surrounded by peritoneum, any inflammation extending from them must first implicate the peritoneum.

7. The milder forms of typhlitis are generally due to a peritonitis over the cæcum, which has been set up by the spreading in depth of a stercoral ulcer (one due to the impaction of fæces). The severe forms, and notably those which produce suppuration, usually depend on troubles in the appendix. The record of the London Hospital during the last few years show twenty-four deaths from typhlitis, and in all the appendix was involved. During the same period thirty-five cases of typhlitis were admitted which recovered without suppuration under medical treatment. Fitz, as a result of his investigation, says: "In most cases of typhlitis the cæcum is intact, while the appendix is ulcerated and perforated." On the other hand mild cases of typhlitis may follow troubles in the appendix, and severe forms may be due to mischief in the appendix without any suppuration following.

8. The specific troubles in the appendix which cause typhlitis are fæcal concretions in nearly half the cases, and foreign bodies in nearly one-eighth. In these cases the appendix may be perforated, sloughing, or gangrenous. The process may be perforated without the surgeon being able to find a foreign body, it may become gangrenous from becoming twisted on itself, or may be enormously distended with mucus from obliteration of its lumen, or may be the seat of acute ulceration. The abscess tends to open as follows: In an analysis of sixty-seven cases by Bull, in twenty-eight instances it burst through the anterior abdominal parietes, in fifteen it opened into the cæcum, in eight the general peritoneal cavity, in two each the thorax, rectum and bladder. Of the fatal cases, according to Fitz, sixty-eight per cent. die during the first eight days, and two-thirds of these die between the fourth and eighth days.

The general clinical phenomena of typhlitis are clearly enough drawn, but it is met with under very varying degrees of severity. For the purpose of discussing the treatment, it may be divided into three classes:

1. The mild form of the disease. Statistics show this to be the more common variety of the trouble. It usually ends in complete recovery, is amenable to simple medical treatment, and seems to be usually that variety of typhlitis which depends on fæcal accumulation in the cæcum. The trouble is more common among males than females; the patients are mostly young adults, (thirty-six per cent. are under twenty; twenty-one per cent are over forty); in perforating appendicitis, fifty per cent. are under twenty, and only nine per cent. over forty years, (Fitz). The pain appears suddenly, there is seldom any rigor, the fever is not so high, the vomiting not so marked and the pain is less apt to radiate to different parts than in the severest variety. The tenderness is probably less marked; the tumor appears earlier—possibly from the first—it is comparatively large, is apt to be doughy and to feel less fixed, it cannot so readily be made out through the rectum. The bladder troubles are usually absent. Inflammatory symptoms gradually subside, and the attack passes off from in three to seven days.

It is impossible to be emphatic in these distinctions, for sometimes the severest form of suppurative typhlitis begin with mild symptoms. The continued absence of local symptoms of suppuration as time advances is a noteworthy point.

This form in typhlitis yields readily to medical treatment.

2. The severer form of typhlitis leads to suppuration and nearly always depends on some trouble commencing in the appendix. The symptoms are generally more severe and progress more rapid than those belonging to the first class.

There is often a rigor. Generally no history of constipation. Sometimes there is history of a cold or an injury. Pain is severe, vomiting marked, tenderness and other signs of peritonitis pronounced. Fever is high. Tumors slow to make its appearance, can often be felt through the rectum, and is fixed. Pain is apt to radiate, there is often vesical tenesmus and pain on moving right thigh. Local swelling takes on the phenomena of suppuration. These symptoms are necessarily liable to great variation. Sometimes the first symptoms of the disease are those of perforation and sometimes the symptoms may be latent or unaccountably delayed. It is in this form of typhlitis that prompt and definite surgical treatment is indicated.

3. In this class are included the cases of relapsing typhlitis. This usually depends upon some trouble in the appendix which falls short of producing suppuration. If an abscess has formed and the patient recovered from it, he is not likely to have other attacks. The simple form of typhlitis (the stercoral form) is apt to relapse if the same cause is repeated; the trouble, however, retains its primary character. In relapsing typhlitis, due to appendix troubles, the attack returns

with vigor. They are usually quite independent of constipation. They are apt to increase in severity. The trouble is due to a retention of mucous within the appendix, and the end of it may be enormously distended and often singularly hard. There is no stone or foreign body in these cases. The extended appendix sets up a certain amount of peritonitis, and in time is relieved itself, and the patient enters a quiescent period, which may or may not precede another attack.

The Treatment of Typhlitis.—1. Cases which belong to the first class do well enough under the recognized medical treatment. Rest, opium, carefully regulated fluid food in small quantities, and leeches over the right illiac region, or some rubefacient fomentation, are indicated. At an early period the colon should be evacuated by enemata.

2. In this class of cases in which suppuration has occurred or is expected to do so, surgical measures stand pre-eminent, and in their application a careful judgment must be exercised. It is assumed that the treatment useful in the first class has been tried faithfully and found insufficient. An incision must be made to evacuate the pus, and here there are three points to consider: (*a*), the time at which the incision should be made; (*b*), the preliminary use of the exploring needle; and (*c*), the site of the incision.

(*a*). The use of the knife is very rarely called for before the fifth day, and before this time should be used only in the presence of very marked symptoms. The old method was to leave the disease to take care of itself until it was almost ready to burst through the skin; now with some a reaction has taken place and they have gone to the other extreme. It is urged in favor of the early operation that many cases have been recorded in which the operation was done too late, and in which the fatal issue might have heen averted by operation. Such cases do occur, it is true, but they do not prove that all cases should be operated on within forty-eight or seventy-two hours. The large number of spontaneous cures, and the dangers of the operation must not be overlooked. It is also urged that some cases have proved fatal by bursting into the general peritoneal cavity within thirty-six hours, but such cases are rare and cannot be anticipated. If symptoms of perforation appear, the abdomen should at once be opened and the cavity well washed out and the perforation dealt with.

Again, it is asserted that there is danger of rupture into the peritoneal cavity, and cases have been recorded where this took place, though the abscess contained only an ounce or so of pus. But, as a rule, the abscess does not tend to burst with the peritoneal cavity, but tends to open through the abdominal walls. Out of Dr. Bull's collection of sixty-seven cases, in twenty-eight the pus escaped through the belly wall, and in only eight cases into the peritoneal cavity. Although it is true that small collections of pus have burst into the peritoneal cavity, still some abscesses containing several pints of pus have been evacuated through integuments some weeks after the commencement of symptoms of typhlitis. It is not easy to discover small collections of pus, and in not a few recorded cases no pus has been found after making the incision. It is true that the sooner retained pus can be let out the better, but the fact does not guarantee the harmlessness of speculative incisions for pus. Moreover, it is desirable that the pus be well localized and that the resulting adhesions should have connected the inflamed district directly with the abdominal wall. The later the operation, the more easily can pus be reached. If the early incision became the rule, it would frequently happen that the general peritoneal cavity would have to be opened to reach the pus which would then first find its way into that space before escaping. Deep-seated pus is slow to make its presence evident and it rarely does so before the fifth day.

(*b*). American surgeons have extensively used the exploring needle but the author thinks it should be strongly condemned. The needle is thrust deep into the iliac region of the abdomen, and often pushed in several directions or introduced three or four times at one sitting. Pus may possibly be diagnosed by safer means, but if exploration be deemed necessary, a cautious incision is safer than a series of plunges in the dark. The use of the needle is not free from risk. It must be now or then thrust through the cæcum, and if that part of the bowel be ulcerated, it may induce a suppuration which did not previously exist. It has been shown that a hollow needle in tympanites is not devoid of risk, therefore, there is so much the more risk when the bowel is inflamed and softened. If the typhlitis be due to distension of the appendix with mucus—a form which may end in complete recovery—a needle introduced during the acute stage may tap the cyst, allow the fetid mucus to escape, and thus set up suppuration. When an abscess does exist, its walls are often formed by the cæcum and coils of the ilium, matted together, and a needle could scarcely be introduced without risk. Moreover, the needle does not always find pus even if it is present.

(c). The best situation for an incision cannot be settled in an arbitrary manner. It should be placed over that part of the inflamed area which appears to cover the seat of suppuration. An examination through the rectum, and under ether, will usually reveal this. Pus should be reached by the shortest route and allowed to escape in the most direct manner. The most convenient incision is one made obliquely from above downward and inward ; and external to the epigastric artery and following the general inclination of the incision made for tying the deep iliac vessels. An incision on the right semilunar line will, in the majority of cases, be found inconvenient. A medium incision is bad, for the pus is localized by adhesions and shut off from the general peritoneal cavity, and the pus would have to be evacuated through that cavity. The best placed incision is that which leads into the peritoneal enclosure without opening up the general cavity. The incision should be free—a careful examination should be made for foreign bodies etc., and a search be made for the appendix, and its condition determined. This should be done with great

care in order not to break down the frail adhesion which often forms the abcess wall. The cavity should never be scraped, but partly washed out with a warm and weak antiseptic solution, and a large sized drainage-tube or a long strip of iodoform or carbolic gauze should be introduced.

If the appendix is diseased, it should be ligatured around the proximate healthy portion, and the diseased part should be removed. If the appendix is entirely gangrenous, or perforated close to its origin, it is better to leave it untouched. This is also the best course when it is very adherent. Opening the abcess is the main point; dealing with the appendix is a secondary matter. If the cæcum be found perforated, it is wiser to make no immediate attempts to clean it. These fistulæ, if left alone, will more often close than remain open.

In cases of relapsing typhlitis, removal of the appendix during a period of quiescence, offers more admirable results than are to be obtained in the treatment of any other form of the disease. Before operating the position of the appendix will be made out if possible. The operation should not be performed until all inflammatory symptoms have subsided. The incision should not be made directly over the dullest region. When the cæcum appendix is exposed, the general peritoneal cavity should be cut off from the seat of operation by sponges, all adhesions should be divided by cutting, for in breaking them down there is danger of tearing the bowel. The appendix should be clamped and divided half an inch from the cæcum; its mucous membrane should be united by many fine sutures and the outer walls should be united by a second row of sutures and the stump should be lightly attached to any adjacent surface of peritoneum. The abdominal wall should be closed and no drain is necessary. During the operation all adhesions likely to cause trouble should be dealt with.

A Plea in Favor of Early Laparotomy for Catarrhal and Ulcerative Appendicitis. By N. Senn, M.D., Ph.D. From the *Journal of the American Med. Ass'n.*

Post-mortem examinations and clinical experience have shown that generally localized diffuse peritonitis, as well as suppurative inflammation of the connective tissue originating in the ileo cæcal region, are caused by an antecedent affection of the appendix. In the last few years numerous cases have been reported of phlegmonous inflammation and circumscribed peritonitis, caused by perforation of the appendix vermiformis, where prompt action on the part of the surgeon would have saved life; but, on the other hand, many laparotomies performed for the same cause have proved powerless to save life, because too late; the invasion of the general peritoneal cavity had caused diffuse septic peritonitis. Hence the importance of treating the primary disease of the appendix by radical measures before the advent of incurable complications. The author believes that the symptoms of perityphlitis are often preceded by symptoms pointing to appendicitis.

It is of the greatest practical importance to recognize these symptoms early and to remove permanently the source of danger. The author then gives the histories of two cases.

Excision of the appendix in such cases is a curative and prophylactic operation. Its removal before the inflammation has reached the serous coat is one of the easiest and safest of all intra-abdominal operations.

As a general rule, the appendix should be removed in all cases where, from the symptoms and history of the case, the existence of a localized destructive inflammatory process can be surmised. Appendicitis can be divided in two classes: 1. Acute. 2. Chronic. Most, if not all, acute cases are preceded by a chronic lesion. A foreign body, for instance, may be present for a long while without giving rise to serious symptoms, but it cannot remain long without causing a catarrhal inflammation.

An ulcerative catarrhal inflammation may exist a long time before it gives rise to acute symptoms, and when they do appear it is due to the spread of the inflammation to the peritoneal surface. It is then no longer an uncomplicated case of appendicitis. Chronic appendicitis is characterized by acute exacerbations of short duration. Between the attacks the patient may be in perfect health. The most important symptoms pointing to the existence of chronic appendicitis are localized pain and a circumscribed area of tenderness over the location of the appendix. Simple appendicitis gives rise to no tumor as long as the lumen of the appendix is open, but sometimes it can be felt in people with thin abdominal walls.

During the acute exacerbations of chronic appendicitis the symptoms, apart from the pain, are not severe. The temperature is normal, or there is only a slight rise. The pulse is very slightly increased in frequency. Vomiting is sometimes present, so is constipation. The frequeney of catarrhal and ulcerative inflammation of the appendix, as compared with the rest of the intestinal tract, is probably due to the anatomical location of this structure. The inflammatory process does not extend by continuity to the cæcum, but only tends to spread in a peripheral direction.

In operating for simple appendicitis, strict antisepsis is of the greatest importance. The incision which renders the cæcum and appendix more accessible is one made parallel to the long axis of the colon and cæcum. It should be four inches long and directly over the centre of the cæcum, and extend to within an inch of Poupart's ligament. As soon as the peritoneum is opened a small compress of aseptic gauze, wrung out of sterilized water, should be packed around the cæcum to prevent prolapse of the small intestines. If the serous coat of the appendix has not been implicated by the inflammation, the only attachment to be separated is the mesentery of the appendix. If inflammatory adhesions are present, they should be separated and all bleeding points carefully tied. When the appendix has been completely isolated, a ligature of fine silk is tied around its base, close to the cæcum, and about a quarter of an inch below it the section is made with scissors. The stump should be disinfected and dusted with iodoform. The serous surfaces of the cæcum, from both sides, should then be stitched over it by a number of Lembert sutures. The abdominal wall should then be closed by two rows of sutures, one uniting the peritoneum and the other the remaining tissues. No drainage is necessary.

The Value of Creasote in Fifty Cases of Disease of the Air Passages.

By Wm. Perry Watson, A.M., M.D. From *Virginia Medical Monthly*.

The use of creasote in the treatment of phthisis dates back to 1830. Later on it fell into disuse, and was again introduced in 1877. The cases reported are not selected. The improvement in many cases (all of which are hospital patients) may be ascribed to change of living (good diet and rest), but these cannot account for the permanent relief obtained in others. Again, glycerine and whiskey are known to be good for so-called "coughs," to say nothing of their sustaining and stimulating qualities. After the use of the inhalers for a few days, the sweetness of the wards was noticed by the visiting staff and the Sisters in charge. The inhaler used was Robinson's Perforated Zinc Inhaler, made by W. F. Ford, New York. The inhalants were as follows:

(1) ℞

Creasoti (Morson's), sp. chloroformi, alcoholis, āā equal parts.

M. S.—Five to twenty drops to be used on inhaler every three hours.

(2) ℞

Iodoformi, - - - -	grs. xxiv
Creasoti (Morson's), - - - -	miv
Ol. Eucalypti, - - - -	mviii
Chloriformi, - - - - -	mxlviii
Alcoholis and ætheris - - āā q. s. ad	℥ss

M. S.—Five to twenty drops to be used on inhaler every three hours.

Internally, creasote was given in the following formula:

(3) ℞

Creasoti (Morson's), - - -	mxii
Glycerini (Price's), - - - -	℥i
Sp. Frumenti, - - - q. s. ad	℥ij

M. S.—Half a teaspoonful every three hours, well diluted.

Cough medicines and mixtures to relieve night sweats were also frequently given. The author then gives a synopsis of the history of fifty cases.

Summary: Of the above fifty cases of disease of the upper air-passages, eight were in the last stages of consumption, and while improvement was noticed for a few days, no permanent effect resulted from the creasote treatment. Of the sixteen cases with simple consolidation, the improvement was so marked in all cases but two (one complicated with chronic Bright's disease, and one with consolidation at both apices) that they were discharged from the hospital. Of six cases with chronic bronchitis, some complicated with emphysema, others with pleural thickening, all were markedly improved. Of five cases of acute bronchitis, all were rapidly cured. The case of acute pleuritis, with effusion, was quickly cured. The cases of laryngeal phthisis were improved. The case of acute laryngitis was cured by the inhalation alone. The cases of nasal catarrh, as a complication, were quickly cured.

The author concludes that, while creasote will not cure all cases of consumption, yet it will benefit nearly all; that in cases of consolidation, before the "breaking down" process begins, it seems to arrest the diseased process. In acute and chronic bronchitis its use was very marked. The more constantly the inhaler was worn and the internal mixture taken, the more marked was the improvement.

CLINICAL RECORDS.

A CASE OF TUBAL PREGNANCY. By E. D. Ferguson, M.D., Troy N. Y.

The following case presents some points of interest:

The patient, a woman, æt 32years nullipara, married over three years, was first seen by me in consultation with Dr. Van Vranken, of West Troy, on October 5, 1889. The following are among the facts then determined: The last menstruation was on July 12th; there had been some slight bloody discharge from the vagina recently; she regarded herself as pregnant; she was and had, been without fever or notable constitutional disturbance; she had suffered somewhat from dyspnœa; on September 15th she was suddenly seized with pain to the right of the hypogastrium, and the pain had continued with varying intensity up to the time of the examination, so that she had practically been confined to her bed; at no time had there been a condition which could properly be called *shock*.

Examination showed a tumor of about the size of a small orange in the right broad ligament; the uterus seemed by palpation to be about twice its normal dimensions, but was not notably displaced toward the left; there was moderate tenderness over the uterus and over the tumor in the right broad ligament. The diagnosis was right tubal pregnancy with probable rupture downward between the layers of the broad ligament, and proper explanations were made to the husband with a view to an operation. In the meantime electricity (galvanism) was directed.

I did not see the patient again until October 11th. I found but little change, though the tumor in the broad ligament was apparently somewhat larger and quite as firm. There had been two or three paroxysms of severe pain in the region of the tumor, but still no shock or collapse, and no retro-uterine mass. The patient was now informed as to her condition, and, as she accepted the advice for the removal of the tube, arrangements were accordingly made, and the operation took place on the following day, Saturday, October 12th, at 11 A.M. On opening the abdomen, exit was given to a large amount of very dark clots and fluid blood. The amount could only be estimated, but there was more than two pints, probably not more than three pints, of fluid blood and clots.

The layers of the right broad ligament were separated and the space occupied by blood clots and placenta. Apparently the final rupture into the peritoneal cavity had occurred through the upper and posterior portion of the tumor. There was a broad pedicle and the cobbler's stitch was used. The fœtus, which had escaped from the sac, was advanced three months in gestation.

There was considerable shock following the operation, which lasted one hour from taking her to the table till she was again in bed, but reaction was prompt, and when I saw her at 3 P.M., she was comfortable and cheerful, and everything promised a favorable progress. I had requested Dr. Rulison, who was caring for her during the absence of Dr. Van Vranken, to draw her urine at 6 P.M., and his report that he got less than a tablespoonful of urine had an ominous significance. It having been an operation of necessity, no examination of the urine had been made, but, had I known of pre-existing renal trouble, I should probably have proceeded with the operation. I saw her again at 9:30 P.M., and the catheter brought only a teaspoonful of bloody urine. Though she was free from any evidence of shock or collapse, still there was a manifest tendency to somnolence that suggested uræmia, and in fact that supervened soon after midnight, and she died about 4 A.M., about sixteen hours after the operation. An autopsy was made about eight hours after death, and some points then noted deserve attention. The peritoneal coats of the intestines were quite congested at the time of the operation, presumably from the irritating effect of the intra-peritoneal blood, but at the autopsy they presented a normal color and smoothness. The stump was already covered in by firm adhesions through contiguous parts through means of plastic lymph, and the peritoneal surfaces of the incision were so adherent as to require notable force in their separation. During the operation care had been taken to avoid bringing the right ureter into the field of the ligatures, and it was found undisturbed. Both kidneys were in the congestive stage of acute nephritis and presented no evidence of chronic disease. The urine showed "blood casts" and a large amount of albumen. Whether the use of chloroform instead of ether will lesson the mortality from renal changes following abdominal operations seems to me an open question as yet. This case lacks completeness in having no record of the state of the urine before the operation. The death was due to uræmia, more rapidly fatal, doubtless, on account of the depression due to the operation.

The points of special interest to me were the large amount of bood (and clots) in the abdominal and pelvic cavities which must have been there two or more days before the operation, and yet there was no history of notable shock, and no physical signs of its presence in Douglas's *cul-de-sac*. There was sufficient tympanites the day preceding the operation to obscure the diagnosis of its presence by abdominal palpation or percussion.

In addition, the speed with which the pedicle may be covered up and closed in, by plastic material was very striking. Though the patient survived the operation only sixteen hours, the stump was so firmly closed over and shut in as to preclude any probability of hæmorrhage from that source. This result, however, may have been hastened in this instance by the pre-existing state of irritation due to the intra-peritoneal blood. Fortunately, recent experience in laparotomy affords a smaller percentage of opportunities for such examinations.

The uterine walls were found over an inch in thickness.

NOTE ON A CASE OF SYPHILIS IMITATING LUPUS. By R. Norris Wolfenden, M.D., Cantab., Physician to the Throat Hospital, Golden Square.

How closely syphilis may imitate the most varied conditions, especially amongst the dermatoses, is well known to dermatologists. A syphilitic lupus, or lupiform syphilis, has been described, and the case, of which I append the notes, was of this character.

M. S., a married woman, æt. 41 years, came to me at the Throat Hospital on February 26, 1889, presenting the following appearance: Upon the right ala nasi and tip of the nose were nine pink gelatinous soft tubercles, the one on the tip being the largest. These tubercles were semi-confluent, elastic to touch, and soft, unaccompanied by any pain, and, in fact, rather anæsthetic. Just below the septum, and extending to the upper lip, and almost in the middle line, was a large tubercle, ulcerated and covered with a dark crust, which, when removed, exposed an ulcer with raised and thickened edges. On the right side of the upper lip were three other smaller tubercles, arranged concentrically, and outside the left angle of the mouth was another small tubercle.

These various tubercles presented the typical "apple jelly" appearance of lupus, were soft and elastic, and without any appearance of scaling. In addition to this condition of the exterior of the nose, there was a slight degree of ulceration of the septum internally, with a foul-smelling discharge. The right and left edges of the epiglottis were thickened and eroded, and in front of the right arytenoid cartilage and in the inter-arytenoid space were pale elevations, seated on a thickened base, bearing a strong resemblance to lupus nodules of these regions.

The woman was out of health, and had been losing flesh latterly. On inquiring into the history and further examining the patient, it was clear that she had been affected with syphilis, and bore distinct signs of its activity elsewhere.

The patient was married two years ago, and three months later had a miscarriage. Nine months later a healthy male child was born, which has apparently remained in good health ever since. The evidence of syphilis on the patient's body were conclusive. On the back between the shoulders, on the arms and forearms, on both thighs, and the scalp, were bluish-white scars, or spots which had been attacked in apparently the same manner as the nose was now affected. Tubercles had first formed, they had afterwards ulcerated, then cicatrised. The throat had afterwards been affected, but all we could learn was that it had been ulcerated, and had healed under treatment. The uvula, however, had disappeared completely. A slight amount of pain had accompanied the development of the tubercles. On the cheek, arms, and body, were coppery, scaly patches still existent. On the scalp was a deep, round crateriform ulcer.

I mention the case, not on account of its rarity, for probably such cases are not unfrequently met with by dermatologists, but for the purpose of emphasizing the fact how closely syphilis may imitate lupus, a fact which has been frequently drawn attention to by Jonathan Hutchinson and others. In this case the ulceration and foul-smelling discharge, the presence of numerous patches of the same character on different parts of the body, and the history of the case, left no doubt as to its true character.

The characters insisted upon by Tilbury Fox as aiding diagnosis were: In syphilis the tubercles are larger, rounder, harder, and copper-colored; there is no great tendency to desquamate, but a great tendency to suppuration and ulceration. They are found in various parts of the body at the same time. Ulcers, when they occur, have sharp cut edges, are foul, dirty, ashy with ichor, and the tissues round are infiltrated and indurated. In lupus the tubercles are softer, more vascular, and gelatinous. There is not the same tendency to ulceration or crusting; when ulcers occur the edges are not sharply cut, but thickened and rounded, clean and dry, and the edges are non-everted.

The condition of the laryngeal mucous membrane (except for the ulcerated edge of the epiglottis) strikingly resembled what I have seen in true lupus of these regions, and it is well to remember how closely syphilis may imitate true lupus. The case in question bore such strong superficial resemblance to lupus that some who saw it were deceived.

Under large doses of iodide of potash, and the local use of a strong iodoform ointment (ʒi. and ℥i.) the patient made gradual improvement, but the gelatinous tubercles on the side of the nose proved rather resistant. They, however, began to diminish in size after deep scarification and rubbing in of lactic acid.—*The Journal of Laryngology and Rhinology*.

ADDRESSES.

ADDRESS ON SURGERY. By Phineas S. Conner, M.D. Cincinnati, O., Delivered at the Fortieth Annual Meeting of the American Medical Association, Newport, R. I., June 27, 1889.

The surgery of the century has been of three periods: the pre-anæsthetic, the anæsthetic and the modern one. Operative brilliancy characterized the first. The suffering inseparably connected with the use of the knife and the nervous depression resulting therefrom was to be limited chiefly by celerity of execution; hence, the swift moving hand was an essential part of the equipment of the fittest surgeon.

When in the amphitheatre of the Massachusetts General Hospital, "the problem of surgical anæsthesia was definitely solved," a new period began. Pain was no more, and it was permitted to examine earlier and more thoroughly, to remove more extensively, and to operate successfully in regions previously altogether, or in great measure, beyond the reach of art. For twenty years or more, progress was in the line of diagnosis, of development of new and better methods of operating, of extension of the range of surgical interference. Time was no longer an element of prime importance, and the work was regarded as quickly enough done, when well and thoroughly done—too much so, in fact, for not seldom the best interests of the patient have been jeopardized by unnecessary delay in execution, that would not have occurred but for the existing profound insensibility. But though operations in this anæsthetic period were without much of the terrors of the olden time, they yet fell far short of producing the wished for result in preservation of life and early restoration to health. Wound complications were still as ever the bane of surgery, and too often the wisest planned and best executed operation resulted in failure because of the supervention of one form or other of septic infection.

It is scarcely twenty years since patient investigation, careful experimentation and practical testing began to throw strong clear light upon that most obscure of the subjects of medical study, the causes of disease. As never before in the history of medicine, truly scientific methods of research have been adopted and pursued by a multitude of trained observers in all civilized countries, and surgery has entered upon its scientific period, in which operator and patient are profiting by the labors of the chemist, the botanist, the physiologist, the physician, equally with those of the practical and experimental surgeon. It seems but yesterday when Lister's early papers startled the world. It is but twenty-two years since the first one was published, yet what enormous advances since then in knowledge, in treatment, and in the field of operative interference. A new department of science, surgical bacteriology, has been created (for what was done prior to 1867 may for practical purposes be left out of consideration), and in its development has been worked out the mycrobic origin of all those pathological processes looked upon as inseparable from traumatisms, or almost necessarily associated with them if severe. Suppurations, gangrene, septic infection, erysipelas, tetanus, we know to depend upon the presence or the action of one or other of definite organisms that may be isolated, cultivated and inoculated. Recognizing the cause it has been comparatively easy to devise methods, more or less perfect in action, to prevent the development or neutralize the influence of it, and there has been worked out an antiseptic and aseptic wound treatment, the results of which are simply marvelous. But just here I must protest against the wisdom or the justice of the sweeping declarations of a few enthusiasts, who see in other than speedy recovery after injury or operation evidences of what they are pleased to consider criminal ignorance or neglect.

The existing strong probability that in any given case septic infection might be prevented, has given warrant for the performance of operations that in pre-aseptic days were not to be thought of.

Abdominal surgery, that so short a time ago meant scarcely more than the removal of an ovarian tumor too often carried until death was evidently fast approaching, now includes operations upon almost every part of each hollow and solid viscus, and laparotomy has taken its place as a safe, proper, and often indispensable prerequisite to the determination of obscure diseases. Penetrating and perforating gunshot wounds, so generally fatal when treated by rest and opium, have in at least forty cases been recovered from after section and suture, and there are now but few surgeons still unconvinced of the wisdom of early active interference. At our last meeting Senn's carefully elaborated and beautiful demonstrations set forth a means of determining the existence and location of intestinal wounds, that if safe, as it has thus far seemed to be, will remove the greatest objection to laparotomy in these cases, the uncertainty in the earlier hours of bowel perforation—and prevent what otherwise will occur, the overlooking of one or more lesions. It is not to be expected that all or any close approximation to all of these very dangerous wounds will be saved by early operation, for great injury will ordinarily be produced by the bullet, be it large or small; but every case that recovers after section and suture may fairly be considered as rescued from an otherwise almost inevitable death. Unquestionably the laying open of the peritoneum and operating upon an abdominal organ has at times been carried too far. Useless work has been performed, and life has been sacrificed, for it is not true (so far certainly as operators in general are concerned) that abdominal section is in itself without danger, doing no harm if it accomplishes no good. But not a day goes by that somewhere or other life is not prolonged and comfort secured by an intraperitoneal ligation, suture, anastomosis or excision, rendered proper, may we not say possible, only by the aseptic results of scientific discovery and experimentation.

So, too, the diseases and injuries of the other great cavities are being attacked by the surgeon's knife guided by the diagnostic know-edge, the localizing exactness, and the technical skill of the physician, the physiologist, and the vivisector.

There has been but a beginning of intra-thoracic surgery, though for years empyemas have been treated by free incisions, supplemented not seldom by extensive excisions of portions of the chest wall, and even in pre-aseptic days deeply lodged foreign bodies were removed. Only very recently has the lung been cut into for evacuation of abscesses and the treatment of gangrenous areas, such pneumonotomies resulting favorably in one-half of the reported cases; and as yet but few sub-pleural tumors have been attacked. There is every reason for believing that in the near future surgery will be able to render great service to the subjects of not a few forms of thoracic disease now regarded as beyond the reach of art.

The most recent and the most brilliant triumphs have been in the treatment of diseases and injuries of the brain and cord. Nowhere else have our art and science so joined hands in affording relief as here. Tumors removed, foreign bodies taken away and their tracks drained, convulsion-centres excised, serous effusions tapped, life preserved, and comfort secured; so reads the record. Much remains to be done in the determination of the trouble, the exact localization of the mischief, the perfection of technique. Not seldom mistakes will be made, errors committed; but it will be more and more demonstrated that the trained mind and the skillful hand, working together, can recognize and successfully treat otherwise irremediable affections within the skull and the spinal column.

As the operative procedures necessary for the exposure and removal of the spinous processes and laminæ of the vertebræ are but little dangerous, and as septic meningitis can almost certainly be prevented, a change may reasonably be looked for in the treatment of vertebral fractures, especially those in the lower half of the column. Up to this time the cases in which active interference has been made have almost always been those of long duration, in which existing inflammatory changes in the cord, if nothing worse, could not but prevent any favorable result; but even in these, of late, the patient has been none the worst for the operation. Without doubt, early removal of pressure, whether made by bone or blood it matters not, would save many an one from all those deplorable conditions consequent upon myelitis, with which we are unfortunately too familiar.

Is there any good reason why spine fractures should not be treated as skull fractures? And who would now for a moment think of rest and position as the routine treatment of the latter injuries?

But in this scientific period there has been much more accomplished than extension of the range of operative interference, great and important as this has been. As never before it has been possible to preserve damaged parts and to retain important functions, to replace completely detached pieces of bone and secure adhesion as perfect as of the fragments in a simple fracture, to transfer large areas of integument and ingraft pieces of bone, to supply deficiencies in soft or hard parts by skin or bone from dog, rabbit, chicken or frog. Every department of conservative surgery has been and will yet more be benefited by the preventing of the evils consequent upon the action of minute organisms.

The two diseases that produce the widest destruction to part and to life are tuberculosis and cancer. The former, that until the discovery of its causative bacillus was regarded as of rare occurrence in parts belonging to the domain of surgery, is now known to be the producer of the vast proportion of the diseases of bones and joints, and of many of those attacking the skin and more external organs.

Primarily and often for a long time local, if allowed to go on unchecked, it affects other and remote regions, perhaps rapidly becoming generalized. But what has been learned respecting it—that it may attack any part, the blood-circulation in which is disturbed by general enfeeblement or local injury of ordinarily not severe character, that the bacilli may be destroyed or become encapsulated; that the softened tissues may, in like manner, be taken up and carried off or shut in temporarily or permanently; that if the diseased focus be completely removed, as it often may, the part and the whole are as if it had never existed, except so far as function is disturbed by the loss of what has been taken away, and by the scar tissue resulting? How has treatment been affected by this knowledge? It is of prime importance that early diagnosis be made. Located in bone or joint and detected while yet limited, prolonged rest, as absolute as possible, will in the majority of cases, certainly in young subjects, secure destruction, absorption, or encapsulation of organisms or affected cells with resulting restoration to health. Advanced to the stage of caseation and liquefaction, rest may yet be followed by recovery, though ordinarily free drainage, with or without associated removal of the infected tissue, will be of great advantage. Injection of agents such as iodoform or the acid phosphate of lime, that will destroy the bacilli and the tuberculous masses, may produce the wished-for cure. But ordinarily it will be better, indeed generally necessary, to remove the affected area either by formal or informal excision or by amputation. Whether diseased joints are best treated by arthrectomies or by typical excisions is one of the questions still *sub judice*, though in the last three years, as never before, it has shown that formal removals of the larger articulations can, in a large proportion of cases, be followed by early repair and solidification without suppuration or constitutional disturbance; even at times with recovery of original function. Though it is not likely that it can ever be said with truth that the days of the lame and hump-backed have gone by, because of neglect, delay, or generalization of the pathological processes, yet we have good reason to believe that further advances in knowledge of the development and extension of the tuberculous disease will enable the surgeons of the future to so limit, ameliorate, and cure the surgical affection, as that they will no longer constitute one of the most important and destructive of the external diseases.

Of cancer it may with truth be said we know very little; yet of nothing do we more need knowledge. Much less often met with than tuberculous disease, it is yet of not infrequent occurrence. In our eight largest cities (Boston, New York, Brooklyn, Philadelphia, Baltimore, Chicago, St. Louis and Cincinnati), during the five years ending December 31, 1888, of 599,684 deaths from all causes, 13,094 were from cancer, 2.48 per cent., and as we all know the disease is not peculiarly an urban one. In five of the eight cities, New York, Chicago, Cincinnati, Brooklyn and St. Louis, the death rate was much the same, being in the order given, 2, 1, 2, 2, 1.94, 1.93 per cent. In Boston it was highest, being 2.98 per cent.; in Baltimore it was 2.4 per cent., and in Philadelphia 2.28 per cent. In Cincinnati in the last year the percentage reached 2.6 per cent., while in 1868 it was but 0.55; an altogether exceptional rate, however, as only once since has it fallen below 1 per cent., in 1870, when it was .08. For these figures I am indebted to the health officer, Dr. Stanton. One in fifty, then, of the deaths in an aggregate city population of over five millions is due to this disease, and if we have regard only to the mortality of those within the cancer age, *i. e.*, more than thirty-five years old, about one in twenty of the deaths is thus produced. Even among the carefully selected adult individuals carrying life insurance, who are free, or are supposed to be, from family predisposition to cancer, from 2.5 to 3.5 per cent. of the mortality is from this disease. The statistics just mentioned, and particlularly the marked contrast between the high death rate in Boston and the low one in St. Louis, gave but little support to the theory of Haviland, that low lying lands subject to frequent overflows are those in which the disease is most prevalent.

In preparing the mortality statistics of the census of 1880, Dr. Billings found that the disease was most prevalent in New England and Southern California, and least so in the South and upon the Mississippi. It is to be hoped that in the preparation of the vital statistics of the next census such attention may be given to this subject of occurrence and distribution, and such full and complete reports secured as will add materially to our knowledge, and go far towards determining the correctness or incorrectness of the views of the English writer named. Care should be taken to separate, if possible, cases of sarcoma from those of cancer.

Hirsch to the contrary notwithstanding, this affection is becoming more common throughout the civilized world, certainly is so in our own country and in Great Britain. Increased accuracy of diagnosis will not account for a doubling in twenty years of its mortality rate in Massachusetts or in Cincinnati, or in less than twice twenty years in England. Frequently, if not usually, attacking individuals in good general health (though oftentimes appearing soon after a period of marked mental anxiety and depression), it has regard neither to social conditions nor hygienic surroundings. Unlike consumption, which is often of limited duration, ending in recovery, and at the worst ordinarily bringing death gently, cancer left to itself very rarely is spontaneously eliminated, is almost inevitably destructive to part and to life, and is often attended with severe physical and mental suffering.

What is its starting point? An unused long-dormant embryonic cell, at length aroused to activity by local irritation, general enfeeblement or nervous exhaustion? In all probability, no. An abnormal epithelial development, abnormal because unconfined within its normal limits. But why unconfined? An epithelial cell undergoing proper degenerative changes, but arrested at some point short of its complete alteration? What stops its retrograde movement? Is it of mycotic origin? That it should be so would hardly be more strange than that lupus or lepra should be. That it is so has not yet been proved. The many investigations that have been made, some of them for a time apparently fruitful, have thus far failed to discover a causative bacillus, unless further and extended cultivations and inoculations shall prove that Kubasoff has actually found it. Experimental inoculations have again and again produced no specific result, but Lampiasi has claimed that by using a bacillus culture from the blood he succeeded in causing in a healthy part of the patient's skin the growth of a nodule having "an alveolar stroma with wide meshes, which contained many epithelial cells of different form and sizes;" and Hanan has twice successfully transplanted from rat to rat.

No more inviting field is open to the bacteriologists and experimenters of our country (and we have a number of them, as also well equipped laboratories), than this very one of cancer. Cases are numerous, specimens are being daily secured, and there is no reason why America should not now do full part in settling the vexed questions of nature and origin. The imperative necessities of a struggle for existence, and the intense practicality of a new and developing country have heretofore prevented any but the very few filled with enthusiasm or independent of fortune from engaging in purely scientific studies involving minute investigation and patient labor with often no apparent practical outcome. But the times are changing, and the profession of our country may, and doubtless will, ere long, be as well and favorably known in biological research as it has been, and is, in relation to ovariotomy, to ether, to the hip, to the treatment of stone, to the surgical diseases of women, to abdominal section, to a multitude of affections, and the means of treating them.

As we see it in lip or breast, or uterus or stomach, or it matters not what part or organ, is cancer a local disease, or but a local manifestation of a constitutional state? The question is still an open one, though the great number of pathologists and clinicians are now agreed that wherever seated it is primarily and for a time purely local, whatever may be the general conditions inherited or acquired that permit or favor its development. If not of limited area and capable of complete removal, operative interference can be justified only on the ground of affording temporary relief—unfortunately all that is accomplished in the majority of cases submitted to the knife. But there is great encouragement in the knowledge that a certain percentage of patients operated upon do recover; that is, remain free from recurrence for three or more years; and that this percentage is larger or smaller, according as the disease is so situated as to be early detected and thoroughly removed, or the contrary. Located in the lower lip or the cervix uteri, for example, two out of five patients operated upon get well, in the breast one in eight. Why this great difference? Because, we may believe, of the site itself, and of the degree and rapidity of extension, in parts immediately adjacent and of glandular involvement; in other words, of the likelihood of early and the possibility of complete extirpation, or the opposite. How are to be regarded those cases in which, after five, ten or twenty years of apparently perfect health, the disease again shows itself and destroys life? As of long quiescence of infected and infecting cells or of a new and independent affection. The latter explanation certainly makes a far less demand upon our credulity, and it is no more strange that there should be a second than a first attack in a person and tissues possessing an undetermined and unknown receptivity, and such there certainly must be that cancer may be developed at all.

Of nothing are we more certain than of the immense advantage there is in early recognition and speedy removal; and, on the other hand, of the utter uselessness, so far at least as the ultimate result is concerned, of any surgical interference after a wide extension has taken place.

In perfecting, therefore, the means of establishing diagnosis at an early day lies an important work in the future. Though consideration of age, of location, of pre-existing long-continued irritation, go far towards settling the nature of a given tumor, and upon such estimation of probabilities action may generally be safely taken, yet, as a rule, certainty of the character of the growth can only be had after scientific determination of its anatomical constitution. Whatever, then, makes it possible to safely, easily, and without pain, remove for microscopic examination, a sufficiently extensive piece of the mass to show its deep as well as superficial structure, is of much practical value. A convenient and promising little instrument has lately been given to the profession by Dr. Collins Warren, of Boston.

Physiological and chemical investigations have furnished us with early and reliable evidence of the existence of cancer of the stomach in absence of the hydrochloric acid from the secretions of that viscus; may not kindred investigations give us like aid when other organs are affected?

The modern and scientific wound-treatment now enables the surgeon to remove more extensively and at the same time safely, so that active interference may reasonably be expected to be, and is, attended with much better results than could be looked for a few years ago. Much of the work, though, that in the last decade has been done upon internal cancers, has been of questionable utility because of its late performance.

What will the future reveal respecting the non-operative treatment? Will a drug or drugs be found to secure destruction and removal of the morbid mass? May the moderate continued electric current or powerful interrupted currents "flashed through" prove to produce, as has been claimed for them, entire disappearance of the diseased cells? Can some pathogenic organism be inoculated that, without killing the patient will break down the malignant growth? We all know what has been done with the micrococcus of erysipelas.

In nothing could this Association do more than in determining by collective investigation and thorough committee work the frequency of occurrence of carcinoma in the country as a whole, and in its several States, the relation borne (if any) to geological formation, the age of appearance, the relative affection of parts and organs, the influence of therapeutic treatment, and the duration of life with and without operation. Five years of such work would suffice to accumulate a mass of statistics of very great value, the study of which could not but advance the best interests of patients and practitioners; and in this, as in everything else, "many hands make light work." To physicians, surgeons and therapeutists, the subject is one of prime importance, and only by combined scientific and practical work can it be determined what excites and produces the disease, and what can secure its relief.

As we survey the advances, etiological, diagnostic and therapeutic, made in the few years just past, that are of the scientific period, and consider, even in the most hurried way, the problems that are yet awaiting solution, problems relating to nature, origin and treatment of the diseases and injuries and parts within the domain of surgery, what may we not reasonably anticipate as the future of our science and art? Accidents must occur, diseases will prevail, no matter how great the triumphs of preventive medicine. Years ago it was declared that operative surgery had reached its climax. Yet, since then, operations have over and again been done within abdomen, chest, and skull, upon the larynx, throat, and spinal chord, that in boldness of conception and brilliancy of execution have no parallel in the history of medicine. The end is not yet, nor will it be while, the world over, there are active minds and cunning hands busied with the determination of the existence and extent of surgical affections, and ready and able to remove them, aided more and more by the labors of investigators in many departments of science, general as well as medical. Year by year, he who may deliver the Address on Surgery will be able to report doubts removed, discoveries made, remedies employed, and operations done.

PROCEEDINGS OF SOCIETIES.

ENTERALGIA AND CHRONIC PERITONITIS.—Discussion before the New York Academy of Medicine. From the *N. Y. Medical Journal.*

Dr. Jacobi read a paper on this subject. Cases of primary peritonitis of any kind are very rare, most cases being of a secondary nature and may result from many different causes. It may arise under the influence of general diseases—rheumatism, alcoholism, scarlatina, measles, malaria, scurvy, tuberculosis, etc. Among the most frequent causes are catarrhal and inflammatory diseases of the female sexual organs. It is easy to understand how an intestinal catarrh can develop into an enteritis and then into peritonitis. The diagnosis of chronic peritonitis is frequently obscured by such conditions as adhesions around tumors, a movable kidney which had become fixed, etc. The respirations are not necessarily accelerated in chronic peritonitis, and especially is this true in pelvic peritonitis. There might be vomiting if an acute catarrh also existed; constipation or diarrhœa may be present, abdomen is apt to be tumid. Chronic peritonitis is to be diagnosticated with more or less certainty as follows: Place the patient on his back, with lower limbs extended. The flexion and extension of the limbs often causes pain; by palpation, determine if there be exudation or adhesions; by pressure, distinct and circumscribed pain may be found. Pain is a frequent symptom of chronic peritonitis; it may be mild, severe, of short duration, or permanent. Acute attacks are frequent when there is a cause. Extensive peritonitis in the pelvis may exist with no pain unless waked up by defecation, co-habitation, or micturition. Sometimes the pain cannot be diagnosticated from the pain produced by other conditions. The results of the disease are varied and sometimes a simple attack of exudation may shape its fullness in the patient's health.

Tabes mesenterica is another form of chronic peritonitis which it is important to diagnosticate. The main symptoms are atrophy and tumid abdomen. Emaciation and atrophy reach an extreme degree, the subcutaneous fat rapidly disappears, the skin becomes flabby and thin. The muscles also atrophy to such an extent that the outlines of bones become distinctly visible. The eyes become sunken; the bones of the face, with the thin flaccid and dry skin over them furnish a terribly senile expression. The surface of the body is cool or cold, and the veins very distinct, especially over the abdomen. The voice is thin, the cry tearless, the pulse either slow, or frequent, rapid, thin, and compressible. The lymphatic glands are tumified. The preceding symptoms are usually present in all cases; the following are subject to great variation. The appetite may be ravenous or entirely lost; there may or may not be diarrhœa, but the stools are always fetid, which is due to the fatty acids, sulphides, and other products of putrefaction. Diarrhœa is more common and the evacuations may be very frequent but small. The temperature may be normal, subnormal, or elevated. The tumid belly may be painless or very sensitive, the latter especially when there is elevated temperature. The abdomen may be large enough to press the diaphragm upward and interfere with the function of the heart and lungs. The swelling may be tense or flabby, hard or soft, doughy or firm, uniform or irregular. Gentle percussion reveals tympanites. It is common to find œdema, extension of dullness from fatty liver, albuminuria, local inflammations of the abdominal surface, and cough depending on disease of the lungs. The old theory that death was due to failure of absorption is no longer tenable. The primary changes are mostly neoplastic, and, as in other glands, the inflammation may be simple, suppurative, fibrous, cancerous, or tubercular. Simple adenitis is caused by any kind of irritation and is followed by complete recovery. Besides the simple secondary hyperplasia of the mesenteric glands which resulted in obstruction and the tubercular infiltration which caused the same disturbance of function, there is a third condition which leads to symptoms called tabes mesenterica—viz., chronic tubercular peritonitis. It is quite frequent and with wide difference in symptoms. Recovery is sometimes surprising. The present justifiable belief was that only cases of local tubercular peritonitis could recover, and not those due to general infection. The diagnosis, is difficult, and it is hard to diagnosticate it from simple non-infectious inflammation. If distention of the abdomen appeared after an intestinal catarrh and the temperature continued high and the symptoms exhibited a typhoid character, the existence of an acute attack of peritonitis was probable. The prognosis is uncertain, except in the worst cases. It is absolutely fatal when tabes mesenterica meant peritoneal and glandular tuberculosis complicated with or depending upon general tuberculosis. Dr. Delafield made the following distinctions: 1. Cause of chronic peritonitis in which the lesion was only a form of connective-tissue formation. 2. When there existed connective-tissue adhesions and also serous or purulent fluid. 3. Chronic peritonitis with increased thickening and fluid present in quantities. In the first class there were no symptoms, and the adhesions were revived at the autopsy. Patients having localized pain, referred to some part of the colon, might or might not have adhesions. It is difficult to distinguish these cases from tubercular peritonitis, and they become troublesome if a waxy liver was also present. Such cases sometimes behaved like carcinoma of the liver. Chances of error also lay in a dilated stomach due to stricture of the pyloris. Pain in different parts of the abdomen is frequently misleading, sometimes being a reliable indication, at others not. The second class is also difficult to diagnosticate from tubercular peritonitis and carcinoma of the peritoneum. Much depended on the particular shape the peritonitis took. The third class is difficult to diagnosticate from tubercular peritonitis, and simple cancer of the peritoneum and cirrhosis of the liver.

Dr. W. H. Thompson thought the diagnosis of chronic peritonitis always doubtful. He considered an extremely low percentage of urea in the urine a symptom of some value in diagnosticating cancer of the peritoneum and had observed this in two cases. He had found in one case of cancer of the peritoneum enlarged post-cervical glands—a point which Germain Sée thought diagnostical. In cancer there was no exacerbation of temperature, while in tuberculosis there was. When ascites complicated these cases, accurate diagnosis became impossible.

THE CURE OF HERNIA BY THE USE OF THE BURIED ANIMAL SUTURE. By Henry O. Marcy, A.M., M.D., LL.D., of Boston. (From the *Journal of the Amer. Med. Ass.*)

The author begins his paper by giving the histories of fourteen cases of the various forms of hernia which he had operated on during the eight months ending with April, 1889. The series included all the usual varieties and complete a list of nearly 100 operations.

The basic and fundamental factor consists in closing the divided and weakened structures by strong sewing with a carefully prepared animal suture after the removal of the sac. This is aseptically applied and approximates the refreshened tissues by layers of buried sutures so as to avoid the necessity of drainage, and thus allows the complete closure of the wound, hermetically sealed with iodoform collodium, a very simple but germ-proof dressing. The author first began this method of treatment in 1870. The claim for operative measures for the cure of hernia may be strongly made:

First.— It is a safe operation. In all his cases when the integrity of the intestine was not involved, he has never had a fatal case nor one with dangerous symptoms. From the reports of recent operators he had found records of 779 operations for hernia, with only five deaths and these were due to conditions not referable to the operation.

Secondly.—The results of the attempt at radical cure are almost equally surprising as the enormous decrease in the mortality of the operation. Of his cases which he has been able to trace the history, fully 90 per cent. are permanently cured, and in no instance does he advise a truss. The essentials of his operation are briefly as follows: The hernial sac is opened, its contents restored to the abdomen or removed, and it is freely dissected to its very base within the ring. The sac is then drawn down, sewed across with an even, continuous suture, resected and removed. The peritoneum is then carried quite within the ring. In large direct inguinal hernia it is important to restore the obliquity of the canal. "This is effected by commencing at the lower and inner border of the ring, the cord having been gently laid to one side, and closing by double suturing quite to the inner opening of the ring upon the cord, which is now replaced, and the external pillars are closed by similar suture, downward and inward to the pubic tubercle." The inguinal rings are thus reformed and the canal is restored to its normal oblique position. The skin is neatly and accurately approximated by a blind running stitch, taken from side to side with a fine Hagedorn needle, including only the deeper layer of the skin. The wound is now closed without a vestige of the suture being in sight.

Dry the incision, dust with iodoform, and cover with iodoform collodium, into which a few cotton fibres are incorporated, no other dressing is necessary.

Femoral hernia is treated in the same way, but here it is necessary to close the ring after the removal of the sac. Press the femoral vessels outward and introduce the needle from below through the falciform process, the fascia lata, avoiding the internal saphenous vein, upwards through Poupart's ligament, withdrawing the opposite suture with the needle. A second stitch is taken in the same way about one-fourth of an inch nearer the middle line. The third stitch is introduced through the *pubic* portion of the fascia lata, parallel to the saphenous vein and is carried upwards to include Gimberuat's ligament. As many more sutures as necessary may be taken through the pubic fascia and falciform process. The wound is then closed and dressed as in inguinal hernia.

Surgeons are pretty well agreed that the open wound method, or free dissection, is the best mode of curing hernia permanently. They are divided as the best mode of dealing with the sac. Theoretically, no method for restoring the peritoneum to its normal condition, is equal to that of closing the mouth of the sac by a continuous seam. This suturing is best done by the shoemaker's stitch with a needle having an eye near its point. It is convenient to have this needle set in a firm handle. Well prepared catgut may be used, but the author prefers the tendon suture, especially that prepared from kangaroo tail.

As to the time for operation: From his own experience, it is permissible in a large proportion of cases of hernia, certainly male adults, when the hernia is imperfectly controlled by a truss. The operation should be advised in the old large hernia, irreducible in great measure, and rendering the patient incapacitated for active pursuits.

HYPNOTIC SUGGESTION IN THE TREATMENT OF ORGANIC DISEASE.* BY W. W. ASHHURST.

Gentlemen :—In asking your attention this evening to a few words upon a topic in the line of the therapeutist's practice rather than of the surgeon's, I yet feel that I have not passed entirely the confines of what may be interesting and appropriate to us as members of this society—for the surgeon's duties must inevitably, in many cases, embrace the treatment of disease otherwise than by operative interference. A few minutes, therefore, devoted to discussing the value of hypnotic suggestion as a remedial agent in organic disease, may not be altogether misspent and wearisome.

Many therapeutists have admitted that suggestion may be of great service in the treatment of functional disease, at the same time denying that an organic trouble can be in any degree benefitted by it—holding the ground that there is a complete and radical difference in the natures of these two kinds of disorder. The distinction they make is this: that in the organic type there is a physical alteration—an abnormality in the material structure of the tissues—but that in the functional disorder the morbid symptom exists without any physical change in the body to account for it. This, however, would seem an unwarranted assumption—ground surely far too insecure to safely base upon it a limitation to the powers of a remedy so great as suggestion has proved itself.

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* Read before the D. Hayes Agnew Surgical Society, Nov. 21, 1889.

It is universally conceded that all vital processes are inseparably connected with tissue change—are the result of a chemical decomposition of the constituent elements of the body. Thus the phenomenon of the transmission of an impulse upon a nerve fibre may be explained in the following manner: an irritation of a portion—one cell in the fibre—causes a chemical change of some sort to take place there with the production of an irritant compound; this new substance brought into contact with an adjoining cell, causes there also an irritation and a repetition of the phenomena that took place in the first cell; thus—from cell on to cell—the impulse traverses the whole length of the fibre.

In the cells presiding over the higher nervous phenomena—those which constitute the intellect—similarly, each thought, each memory, each wish accompanies and results from a chemical disintegration of these highly specialized cells.

Since every vital process is thus dependent upon a physical alteration in the organism, since every symptom is the manifestation of a chemical change, every morbid symptom must be the result of an abnormal chemical condition of some part of the economy—a morbid tissue change. In other words, a functional disease is but an organic one in which the lesions—the material changes—are so slight as to escape the observer's closest scrutiny. But there can surely be no alteration from the normal in function without a preceding structural alteration—however slight—in the organ whose duty it is to perform this function.

Since, then, the difference between functional and organic disease is one of extent, merely—and of the perceptibility of the accompanying structural changes—the opinion is no longer tenable that a mode of treatment yielding such great results in one will prove entirely futile in the other.

It may be, however, that when the lesion is very extensive the diseased organism has become so crippled in its resources, that even were the economy at large, placed in circumstances most favorable to the exercise of its powers of repairing diseased tissue, so little of this is left that the best treatment will be but palliative.

But it is not unreasonable to hope that a morbid organic process amenable to any treatment will be at least influenced in the direction of repair by hypnotic suggestion; doubtless if sufficient time were available, the rapid course of the disease might not outstrip the slower progress of its remedy, and could the suggestive impression be made of sufficient intensity, the most extensive and obstinate organic disease wuld thus be cured. So that failure to obtain a cure by the application of the "therapeutics of the imagination" can be due only to the patient's own insusceptibility to suggestion.

PHARMACY AND THERAPEUTICS.

It was in 1844 that the now well-known Aperient called "Tarrant's Seltzer" was prepared for the use of the coterie of physicians which composed the staff of the New York Hospital, and from that time to the present it has been a favorite saline with physicians of all schools.

It is not only a most palatable and safe Aperient, but is now extensively used as an antacid in Gouty or Rheumatic Diathesis and as a vehicle to administer the Salicylates, Lithia Salts and Tincture of Iron.

ABSINTHE.—A physiological study of absinthe made by Messrs. Cadeac and Meunier, a few weeks ago, seemed to prove that absinthe itself was not dangerous. These gentleman found that the liquor sold under that name did not contain absinthe alone, but consisted of a mixture of absinthe, anise, badian (or the star anise), coriander seeds, fennel, mint, and some other less·harmful aromatics. Taking each substance separately and giving it to animals, they decided that the absinthe was relatively innocent, while anise seed was the most dangerous part of the drink. A new study of the matter, however, by Dr. Laborde, the distinguished chief of the physiological laboratory at the Faculty of Medicine in Paris, proves that the first experiments were in error. Dr. Laborde found, on injecting a cubic centimetre of essence of absinthe (that is to say one gramme) into the cellular tissue of a guinea-pig, that the animal was taken at once with a violent convulsive attack, with all the symptoms of epilepsy, which gave it no rest until it expired about an hour afterwards. On making the same experiment with ess. anise on another animal, not the slightest symptoms of convulsion followed. These series of careful experiments only confirm the already accepted opinion, that absinthe has a most dangerous influence over the human organism, when injected, and that it is not true that the anise seed, and other aromatics used in its preparation, have much influence over its toxic action.—*Times and Register.*

THE following hints from Lassar's skin clinic are of practical value; we have tested them in eczema. Instead of fats, porous pastes are used, made of the purest vaseline, with oxide of zinc and starch, rubbed slowly together. These may be readily mixed with most remedies in use; they dry quickly, and may be converted into permanent dressings by absorbent cotton, and this gauze be changed when saturated. On the face and other parts not accessible to bandages, ample powdering upon the paste-covered skin will afford a smooth and dry covering, which is easily removed by small oiled rags.

In *eczema of all kinds* the paste treatment offers great advantage over ointments. Lassar's usual formula is:

℞

Acid. salicyl.	2
Vaselin. flav.	50
Zinc. oxid.,	
Amyli	ää 25

In *parasitic troubles* (herpes tonsourans, etc.) sulphur precipit., 10 per cent., sozojodol, 5 to 10 per cent., or resorcin, 5 to 10 per cent.; may be added. On hairy parts vaseline salves are better.

In ordinary *dry or moist eczema of the scalp in children*, the head should be gently washed with chamomile and soap, and then the following applied:

℞

Acid. salicyl.	1
Tr. benzoin	2
Vaselin. flav.	ad 60

In *intertrigo*, penciling with a 3 per cent. solution of nitrate of silver should precede the salve.

For *frost-bites:*

℞

Acid. carbol.	0.5
Vaselin.	
Ung. Plumb.	ää 10
Ol. olivæ	5
Ol. lavend.,	gtt. 10

M.—Ft.

For *calming inflamed skin:*

℞

Zinc. oxid.	25
Ol. amygd.	q. s.

M.—Ft. Pastu mollis.

In *acute eczema*, Lassar warns against watery solutions and compresses.

For *pruritus:*

℞

Acid. carbol.	1
Menthol	1.5
Talci	ad 50

M.—Menthol powder.

℞

Menthol	2.1
Bals. Peruv.	5
Ung. Wilsonii	
Lanolini	ää 20

(With care on face.)

For *pruritus ani*, sitz baths of tar-water and penciling with 2 to 3 per cent. of nitrate of silver solution, also carbolized lead salve.

For *acne vulgaris* and *rosacea* a peel paste is used:

℞

B-Napthol	10
Vaselin. flav.	
Sap. virid.	āā 20
Sulph. præcip.	50

To be applied by the physician, and to remain fifteen to sixty minutes, then gently removed and replaced by powder or white paste. This is repeated after peeled surface is healed, or the following may remain over night:

℞

Resorcin	2.5–5.0
Zinci oxid.	
Amyl	āā 5
Vaselin. flav.	12.5

M—Ft. Paste.

—*Int. Klin. Rundschau.*

A DENTAL ANÆSTHETIC.—The combination of cocaine and antipyrine in solution is said to act as a powerful local anæsthetic upon the gums, and also upon sensitive dentine. The anæsthesia is more lasting and more complete than when cocaine is used singly.

Dr. Martin, in *L'Union Medicale*, suggests the following formula, which he has used with great success:

℞

Hydrochlorate of cocaine	gr. ¾
Antipyrin	gr. vj
Distilled water	m xvj.—M.

—*Medical News.*

SANITARY.

We are so much in the habit of regarding the sanitary condition of Italy as being exceedingly bad, and as having been so many hundreds of years, that we read with much agreeable surprise the Italian Premier's own account of what his administration has done in the direction of sanitary reform.

"For four years," he said, "there had weighed on Italians the incubus of an epidemic"—cholera, to wit—"which, besides physical suffering and material loss, had induced a moral disturbance, inevitable, perhaps, in a country where hygienic education was still so primitive and so sporadic. It was a prime necessity, therefore, to proceed at once to the sanitary rehabilitation of the State, and we made provision accordingly. We addressed ourselves first to the minds of men, and we prevailed on them to look the enemy in the face as the principal means of overcoming it. With anxious and systematic care we took the sting from present evils, and then we reconstructed laws to obviate their recurrence. Sanitary provisions should impose on the freedom of the individual no restrictions but such as are required for the safeguard of the lives of others. Personal hygiene is on that account one of those salutary measures which we are entitled to exact." In cognate spirit the municipal services were unified and at the same time reformed throughout the Peninsula; while, continued Signor Crispi, "we modified the constitution of the Sanitary Councils, so as to insure an earnest and an unremitting surveillance over the public health. We restored to its proper centre—the Home Office—the direction of the seaboard lazarettos, and, by furnishing the chief ports of the kingdom with the means of precautions and defence, we established an outpost system to make head against the importation of disease. By decree and by law of favor (*legge di favore*), we assisted the minor communes in carrying out their sanitary rehabilitation—an opportunity of which already more than three hundred have taken advantage. By a modification and extension of the Bill, enacted for the benefit of Naples, the application of which to themselves was craved by some sixty communes, by considerately evoking and approving plans of house-reconstruction (*piani regolatori*) we have brought to the great cities the blessings of effective resanitation." Nor have more strictly medical reforms been neglected. "We have reconstituted," said Signor Crispi, "the whole vaccination service; we have revised the Pharmacopœia; and on the frontier towns, as a safeguard against epizootic invasion, we have brought up the veterinary stations to military efficiency. We have wrought, in a word, the practical consummation of that sanitary code whose fundamental idea will prove not the least title to the love and veneration long earned from all Italians—whether surviving comrades, or of future generations—by that soldier of science, of fatherland, and of freedom, Agostino Bertani. Thus we may pronounce ourselves as on the true path of that sanitary redemption for which, not less than the political, Italy was yearning—a redemption of equal necessity, and certainly not less of a blessing. An Italy, sound in a physical sense, will yield us those vigorous arms which will fertilize her the best—those hardy constitutions which as living ramparts will prove her strongest safeguard."

REVIEWS.

INTESTINAL SURGERY. By N. Senn, M.D., Ph.D., Attending Surgeon Milwaukee Hospital, etc. Chicago: W. T. Keener, 96 Washington Street. 1889.

The title indicates the character of the book: concise, brief, but to the point and practical. The aim has not been to furnish a complete text-book on the subject, but the author ventures the hope that it contains "some new facts and suggestions which will prove useful to those who practice this branch of surgery." We have not time to consider, as we might properly do, the possibilities in intestinal surgery, brought about especially by the results of asepticism; possibilities that each year come nearer to being probabilities; possibilities, some of which will sooner or later become practically certainties.

Of the author's methods of investigation, more particularly experimentation, we have spoken in another connection, and shall have to speak again in the review of his "Experimental Surgery;" but when we have the pleasure of knowing, if we choose, of demonstrating on animals to our complete satisfaction, that intestinal obstruction in its worst forms—and we may fairly employ this as the severest test of ability in this field—can be permanently relieved by proper operative procedures, when this knowledge comes to us in a clear, common-sense way from one who has travelled the paths for himself, we are not apt to be slow to avail ourselves of the source of the knowledge—the work.

The book takes up first "Intestinal Obstruction"—its Definition and Classification, Frequency, and Surgical Resources in the Treatment of; then the Anatomico-Pathological Forms of; and then "An Experimental Contribution to Intestinal Surgery, with Special Reference to the Treatment of Intestinal Obstruction," a reprint of an article which appeared in the *Annals of Surgery;* then the paper read before the American Medical Association on "Rectal Insufflation of Hydrogen Gas, etc.," and finally the same gas in insufflation of the stomach, followed by the report of ten cases of gunshot wound of the abdomen, "Illustrating the Use of Rectal Insufflation with Hydrogen Gas as a Diagnostic Measure."

The book will be valuable in the practical points it gives in diagnosis, as well as in the directions for operative treatment. Some question might be raised about the advisability of incorporating in the book the papers read at various places; but the objection can only be a sentimental one.

We are glad to have the book, even though it does not exhaust the subject; and we have already had several occasions to refer to it in connection with cases and have not been disappointed.

The publisher has done his work quite well, though the paper is not as good as it might be.

WOOD'S MEDICAL AND SURGICAL MONOGRAPHS. William Wood and Company, Publishers, 56 and 58 Lafayette Place, New York. Vol. II., No. 1, April, 1889. Contents. On Diabetes and its Connection with Heart Disease. By Jacques Mayer, M.D. Blenorrhœa of the Sexual Organs and its Complications. By Dr. Ernest Finger. No. 2, May, 1889, On the Preventive Treatment of Calculous Disease and the Use of Solvent Remedies. By Sir Henry Thompson, F.R.C.S.,M.B. Sprains: Their Consequences and Treatment, by C. W. Mansell Moullin, M.A., M.D. No. 3, June, 1889, General Orthopedics, including Surgical operations. By Dr. August Schreiber. Dr. Mayer's short Monograph on Diabetes and Its Connection with Heart Disease, constitutes a valuable contribution to this theme and is highly suggestive. Dr. Ernest Finger brings to the study of Blenorrhœa of the Sexual Organs ripe scholarship and extensive experience. The author is evidently not so completely conversant with his subject when he comes to the chapter on blenorrhœa in the female. Dr. Schreiber's Monograph on General Orthopedics is a most admirable exposition of this theme and is written by a surgeon of large clinical experience. Vol. III., No. 1, July. 1889 Contents. Cancer and Cancerous diseases, by Sir Spencer Wells, Bart., F.R.C.S. Cardiac Dyspnœa and Cardiac Asthma. By Dr. S. VonBasch. The Influence of Menstruation and of the Pathological Condition of the Uterus on Cutaneous Diseases, by Dr. L. Grellety. Tension as Met With in Surgical Practice; Inflammation of Bone; Cranial and Intracranial Injuries. By T. Bryant, F.R.C.S. Antisepsis and Its Relatian to Bacteriology. By Dr. J. Neudorfer. No. 2, August, 1889, The Treatment of Syphilis at the Present Time. By Dr. Maximilian Von Zeissl. The Treatment of Inebriety in the Higher and Educated Classes. By James Stewart, B.A. Manual of Hypodermic Medication. By Drs. Bourneville and Bricon. No. 3, September, 1889, Congestive Neurasthenia or Nerve Depression. By E. G. Whittle, M.D. The Art of Embalming. By Benjamin Ward Richardson, M.D. The Ætiology, Diagnosis and Treatment of Tuberculosis. By Dr. H. Von Ziemssen. Psycho-Therapeutics or treatment by Hypnotism. By D. C. Lloyd Tuckey. Sexual Activity and the Critical Period in Man and Woman. By Dr. Louis De Séré.

It will thus be seen that the Monographs comprised in the third volume are upon subjects of surpassing importance and great practical utility, as a rule, and we cannot do a better service to the busy practitioner than to urge him to purchase these books.

DIABETES, MELLITUS AND INSIPIDUS. By Andrew H. Smith, M.D. Geo. S. Davis, Detroit, Mich., Publisher, 1889.

This little book is small only because the author has condensed his material in so judicious a manner.

It comes out in cream color and gold and is suggestive of the season. 25 cts.

RECTAL AND ANAL SURGERY. With Description of the Secret Methods of the Itinerant Specialists. By Edmund Andrews, M.D., LL.D., Professor of Clinical Surgery, Chicago Medical College, etc., and Edward Wyllys Andrews, A.M., M.D , Professor of Clinical Surgery, Chicago Medical College, etc. Second Edition, Revised and Enlarged, with Illustrations and Formulary Chicago: W. T. Keener, 96 Washington Street. 1889.

Not quite a year ago we reviewed the first edition of this book. The present issue is rewritten, printed on better paper, and altogether much more creditably gotten up. As regards contents, new chapters have been introduced on the "Anatomy of the Rectum," and on "Proctitis," and a formulary with which "for reference" (the authors innocently observe in the preface) "the practitioner who has once read the book, can by almost instantaneous reference secure the necessary details for the treatment of any given case which is before him." If such were the case it would be hard to keep the formulary out of the pocket of every man in the profession; indeed, many would prefer to commit to memory the appendix in its entirety rather than to trust to the misfortune of being unable to refer to a copy of it.

But there is much that is useful, more that is convenient, and the most of it is practical; and for the latter reason, if for no other, the book will command a good patronage.

EDUCATION AND CULTURE AS RELATED TO THE HEALTH AND DISEASES OF WOMEN. By Dr. Alex. I. C. Skene, Brooklyn, N. Y.

Mr. Davis has put this book also into Christmas array. It deserves however, a binding not only beautiful but permanent, for Dr. Skene gives us here the results of his intelligent observation covering a period of many years. His thoughts are full of interest, his general conclusions reasonable and convincing. Such a book will bring great weight to bear upon the popular but vexed question as to what women should do, and what should be the limits of their work.

ESSENTIALS OF PHYSIOLOGY. By H. A. Hare, B.Sc., M.D., Instructor in Physiology in the Biological Department of the University of Pennsylvania.

The author has compiled from the standard works of Landois, Yeo, Foster, Dalton, Baker, Herman, and Chapman, an excellent question-compend in Physiology. The plates are good, and the selection of the subject-matter is judicious. To the student who feels that he must have a condensation of the subjects of Physiology, this little book will prove a valuable aid.

MISCELLANEOUS.

THE INVASION OF THE "MASSEUR."—We must beg our readers to keep a close eye upon the *masseur*. He is bearing down upon unhinged humanity with a steady and relentless stride. He develops in the midst of us; he sails over from Germany and England to us, while, if there are any graduates of Heilgymnastik still left in Denmark, Sweden, or Norway, we should like to know it; for it has appeared to us, after some busy morning, that they have all called. Truly, the *masseur* is among us. He is a man of great resources. As his fraternity increases, he does not lose heart, or complain of competition, or seek protection from the State—he simply enlarges his field. In olden times the rubbing of a stiff knee with officinal linimentum saponis was the centre and circumference of massage; soon, however, we learned how soothing was the emollient and theobromated hand upon the hyperæsthetic skin and diseased muscle. The *masseur* became firmly established as the resourceful prop of hysteria and unfailing staff of morbid locomotion. But then the sinewy and insidious hand began to gather adventitious aids, and seek new worlds to conquer. Having organized its movements into a company of Gallic polysyllables, so that its manœuvres of *tapotiment* and *pétrissage* and *effleurage* should not be mistaken for plain every-day slap-slap, jab-jab and thump-thump, it proceeded to attack all the several diseases and organs of the body. Adipose tissue in excess was made to disappear, while glandular tissue, if mammary, was rubbed to make it grow. Massage has now applied itself to diseases of the eye, and granular lids are, *quoad* the granulations, artistically rubbed off; it has invaded the mouth and throat, reducing hypertrophied tonsils, opening the Eustachian tubes, and curing catarrh and deafness. The abdominal viscera were the early and easy subjects for this now illustrious science. The colon's lax vermicular waves are tempestuously hastened, and the modest stream from the smaller bowel has scarcely babbled through the ileo-cæcal valve before it is rushed madly into the rectum. The pelvic organs have of late received the devoirs of this new art; and the uterus has been rubbed and stroked and pommeled, all in pure French terminology, until this martyr-viscus could not help but free itself from adhesions and congestions, and pillow itself gently on its original vesical cushion. Lastly, we learn that the heart is to have massage. The heart has been, we are told by poets, torn and bruised, and bled and broken; but it remains for modern science to see that it shall have *effleurage* and lomi-lomi. There are still a few things left for the *masseur*. Can he not apply *tapotiment* to the brain, or, at least, to the cerebellum? Has he done justice to the kidneys? Might not the ovary receive a course of artistic jabbing before it is removed and bottled? When all fields are conquered, and every viscus springs responsive into blooming juvenescence beneath his learned touch, we recommend the *masseur* to Christian science.—*Medical Record.*

MEDICAL NEWS AND NOTES.

INTERNATIONAL MEDICAL CONGRESS.—We have been asked to place before our readers the following information:

We the undersigned hereby give notice that, according to resolution passed at the Washington meeting, September 9, 1887, the Tenth International Congress will be opened on the 4th and closed on the 9th day of August, 1890. Detailed information of the proceedings will be issued shortly. Meanwhile we should feel sincerely obliged if you would kindly make this communication known among your medical circles, and add at the same time, our cordial invitation to the Congress.

VON BERGMANN,
VIRCHOW,
WALDEYER.

GUNPOWDER AS A MEANS OF CRIMINAL ABORTION.—Dr. Alexander I. Voitzekhovsky describes (Proceedings of the Elisavetgrad Medical Society, September 20, 1888) two curious cases of criminal abortion caused by the internal use of gunpowder, in the dose of a small-sized wineglassful. In both of the women, who were peasants, the fœtus was expelled in a few hours after the ingestion of a single dose. The substance seems to enjoy the reputation of a reliable emmenagogue and ecbolic in Russian popular medicine. As Dr. Voitzekhovsky thinks, it acts identically as savine oil, rue, powerful drastics, and such like ecbolic drugs, which give rise to abortion through their causing primary toxic gastro-enteritis. The most energetic ingredients of gunpowder are said to be nitrate of potassium and sulphur. The author also mentions a case of abortion, at the second month of pregnancy, in a woman who used for the purpose large quantities of the so-called *glühwein* (Russian *glintvein*); that is, a red wine mulled with such spices as cloves, cinnamon, pepper, etc.—*Medical and Surgical Reporter.*

THE *Vienna Med. Wochenschrift* says in regard to neuro-surgery that Prof. Thiersch, with a specially constructed forceps consisting of a convex blade working in a concave blade, the surfaces of both being first channeled out and then smoothed down, grasps the nerve firmly at its point of emergence from the skull, and removes the entire bundle by torsion. He has done this twenty-eight times in seventeen patients, five times on the supraorbital nerve, eleven times on the infraorbital, three times on the lingual, four times on the inframaxillary, several times on the mental auricularis major, intercostal, etc. In the discussion before the late Congress of the German Surgical Society, Professor Horsley stated that he had operated fifteen times for trigeminal neuralgia, in about one-third of the cases with success. In obstinate and recurrent cases he had opened the middle fossa of the skull and divided the branches of the trigeminus at the inner side of the foramen rotundum and ovale. In one case he attempted to extirpate the Gasserian ganglion, but was prevented on account of hæmorrhage. He regards most of the neuralgias in question as due to a peripheral neuritis.

A GOOD, LONG SULPHONAL SLEEP, AND NO HARM DONE FROM THE LARGE DOSE—THREE TABLESPOONFULS.—A Berlin correspondent of the *Medical Press and Circular* details the following remarkable occurrence.

On January 5th of the present year a workman in Riedel's factory took a full tablespoonful of sulphonal, that he might for once have a good sound sleep. Half an hour later, feeling no effect, he took two tablespoonfuls more and went at once into the village beerhouse. In about half an hour after taking the second part of a half-glass of beer, such a tired feeling came over him that he left the remainder of the beer on the table, "went home and so to bed," as Pepys says. He remembers nothing after this. At ten o'clock on the morning of January 8th he was aroused from his sleep, recognized the people about him and went off to sleep again. On the 9th, at one in the afternoon, he was awakened by his wife, and remained awake till eight in the evening, felt stupid, but was rabidly hungry, and enjoyed some food. The next morning he got up at seven o'clock, and from that time felt no trace of tiredness or mental disturbance.

Three tablespoonfuls of sulphonal would equal about 420 grains. No wonder he slept for days and nights. The wonder is that he sleeps not now.

HOW TO ACT WHEN BITTEN BY A RATTLESNAKE.—Dr. S. Weir Mitchell contributes to the August *Century* a profusely illustrated article on "The Poison of Serpents," from which we quote the following: "I am often asked what I would do if bitten while far from help. If the wound be at the tip of a finger, I should like to get rid of the part by some such prompt auto-surgical means as a knife or a possible hot iron affords. Failing these, or while seeking help, it is wise to quarantine the poison by two ligatures drawn tight enough to stop all circulation. The heart weakness is made worse by emotion, and at this time a man may need stimulus to enable him to walk home. As soon as possible some one should thoroughly infiltrate the seat of the bite with permanganate or other of the agents above mentioned. By working and kneading the tissues the venom and the antidote may be made to come into contact, and the former may be so far destroyed. At this time it becomes needful to relax the ligatures to escape gangrene. The relaxation of course lets some venom into the blood-round, but in a few moments it is possible again to tighten the ligatures, and again to inject the local antidote. If the dose of venom be large and the distance from help great, except the knife or cautery little is to be done that is of value. But it is well to bear in mind that in this country a bite in the extremities rarely causes death. I have known of nine dogs having been bitten by as many snakes, and of these dogs but two died. In India there would have been probably nine dead dogs."

DR. LOUIS A. BRYAN, of Houston, Tex., reports in the *Virginia Medical Monthly* for October, a case of congenital absence of the uterus and its appendages. He was consulted by the patient a mulatto woman, and her husband, for relief from an obstruction of the vagina which prevented coition. The external organs were normal, and well developed. The vagina was normal for about two thirds of its length from the vulva. It was then perfectly closed by a membrane resembling the outer walls of the vagina. The index finger in the rectum and a sound in the bladder, could detect the abrupt terminus of the vagina, but could find no sign of the uterus or its appendages. The subject is twenty-five years old, has never menstruated but suffers at each period with severe pain in the head, and has some congestion of the eyes. She has sexual desires and enjoys sexual intercourse.

A SCHOOL for the thorough instruction of nurses in the care of babies is to be established in New York, in connection with the Babies' Hospital there. The *Herald* states that there is no school of the kind either in this country or in England, the only one in existence being in Germany.

IT has been proved that heartbeats can be detected by electricity. The hands of a subject dipped into two basins of water in connection with a capillary electrometer, cause a reflection of the instrument at every beat of the pulse.

EXPERIMENTS at Leipsic show that skin grafted from a white to a colored person becomes gradually black, and that black skin grafted upon a white person in time becomes white.

VACCINATION AGAINST TUBERCULOSIS.—M. Darenberg, of Mentone, has read a note to the Academy of Medicine, embodying the the following propositions:

1. In all consumptive maladies general reconstituants act by enabling the organism to resist the poisons formed in the stomach and bowels by abnormal fermentations.
2. The evolution of tuberculosis in guinea pigs and rabbits may be retarded long, by habituating them, little by little, to support the tubercular virus.
3. The tubercular virus is a poison which one can manage like mineral or organic poisons.
4. If, on the one hand, one can increase or lessen the toxicity; if, on the other it is possible to augment the resistance of the organism to the action of the virus, it ensues naturally that following this idea up, one may find the point at which the virus is transformed into a a protective vaccine.—*Journal d'Hygiene.*

A BILL has been introduced in the Senate of South Dakota, having for its object the regulation of medicine in that State.

VASELINE and water may be mixed by the addition of two drops of castor oil to each gramme of the liquid. By this means iodide of potassium may be introduced into an unguent without danger of decomposition.

THE New York Board of Health is experimenting with a disinfecting apparatus in which dry heat is employed for destroying disease germs, thus obviating the damaging consequences of the usual methods of disinfection.

DR. DUNCAN, physician of the steamer Colon, who while suffering with remittent fever last June, was bundled off to Swinburne Island by the Brooklyn authorities as a yellow fever patient, has sued that city for $60,000 damages.

THE second Congress for tuberculosis will be held in Paris during the latter part of July, 1890. Professor Villemin will act as president. The following questions are to be discussed: 1. The Identity of Human and Bovine Tuberculosis, Also That of Other Animals; 2. The Bacteriological and Morbid Associations of Tuberculosis; 3. The Isolation of Tuberculous Subjects; 4. The Agents Capable of Destroying Koch's Tubercle Bacillus, With a View to the Prophylaxis and Therapeusis of the Disease in Man.

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EDITORIALS.

IT is customary with merchants from time to time to "take stock," as they term it, in order to ascertain the extent of their gains or losses as the case may be. It is well for the physician to pursue a similar course with reference to his intellectual and moral aims and methods; to discover whether he has been true, in his endeavors, to his great problem to protect the healthy from disease, and to cure or relieve the sick. *Prophylaxis,* the first part of this problem, it need scarce be said, is a subject of intense interest and surpassing importance. It assumes, as a postulate, a knowledge of the causes of diseases and the mode in which they act on the human organism. It is undoubtedly a fact that ætiology has made great advances of late years, thanks to the genius of a Koch and other laborers in this field, and we now know that many diseases are evoked by pathogenic micro-organisms. The greater part of diseases, however, are not parasitic, and their causes, according to our present knowledge, must be sought in race peculiarities—predisposition, quality of food, clothing, kind of dwelling, occupation, mode of life, telluric and atmospheric conditions, etc., etc.

The means at our command in the way of prophylaxis are limited, but we have cause for hopefulness, looking to the future, from the immense progress made in the past few years. The objective point in prophylactic measures is to ward off morbid causes or make them inoperative, and to lower the susceptibility to disease by increasing the power of resistance—that is, by instructing the people on questions of personal hygiene. The first part of this problem must necessarily in large part fall to the lot of public Sanitary Boards. In regard to the second problem—to diminish susceptibility to disease—a great deal may be effected by judicious advice on the part of the family physician. As Senator well expresses it, all disease depends, ultimately on the reaction which the organism or its individual parts—the cells—oppose to the action of a condition disturbing their normal condition. The more powerful the organism and, as a consequence, the more active the cells, the better will the latter be able to cope with all injurious influences in the way of morbid causes. By frequent repetition of the irritative causes and the reaction evoked by them, by custom, certain capabilities of resistance are roused to the greatest degree of energy. Moreover by the frequent repetition of an irritation, the excitability of the cells is weakened, and such a change occurs in their nutritive condition that influences to which they have been accustomed, cease to operate injuriously. In passing it is only necessary to allude to the vast importance of protective vaccinations. So far we have only certainly demonstrated that we can protect against small-pox in this way but it is exceedingly probable that the day is not far distant when immunity from many other diseases will be purchased by protective inoculations.

A correction may be necessary here, as the preventive inoculations of Pasteur against hydrophobia, in the opinion of most observers, are demonstrated so that hydrophobia and small-pox must be placed in the same category, so far as preventive medicine is concerned. In regard to the prevention of hereditary diseases much can be done and here the rôle of the family physician plays a most conspicuous part. As to the other part of the physicians aim to heal the sick, the most important element in his medical education must be a thorough and exact knowledge of *diagnoses.*

A. Bérard, in a *thése de concours*, undertook the laborious task of furnishing an enumeration of the errors in surgical diagnosis; in ten days he had discovered two hundred and sixty-seven of them, which had acquired more or less notoriety. As Bardeleben well remarks, "what a sum we would have reached if longer investigations were made and we could only mention those which have not been published." As is well known much of our treatment must be symptomatic as it is often impossible to fulfil the indication to cure the disease itself.

It is our sad duty to announce the death of James H. Hutchinson, M. D. In him, Philadelphia has lost one of her most honored and best beloved physicians.

NOUS NOUS SOUTENONS.—It is very gratifying to the Editors of this JOURNAL to know that it continues to hold the confidence of its readers, and to receive daily testimony through its correspondence as to its steadily increasing usefulness and value. This is due to the fact that the JOURNAL spares no labor in order to grasp the widest range of medical thought and achievement, and because it endeavors to present everything of interest in the vast and complicated movement which makes up medical progress, in so judicious a manner as to form monthly, a harmonious and well-balanced volume.

It is the largest medical monthly in this country, and as it now begins its fiftieth volume it is proudly conscious that it is the oldest. Therefore it should be the best.

Because it is so large, it can publish without curtailment, original articles of infinite value to general practitioners, and because there is still left so much space, it gives every month the condensed treasures of scientific thought and action at the bedside, at the operating table, in the laboratory, and from the discussions of societies in every land where men are doing practical medical work.

The Profession as a whole and doctors individually were never so busy as they are now. Never has their work been in the past so practical, so thorough, so analytical. Societies and associations spring into life fully equipped for work and discussion. They have no longer their period of youth, and their sophomorical utterances. The older societies find in these new ones a stimulus which spurs them on to efforts which otherwise might never have materialized. This condition of things in the Profession causes and necessitates renewed enterprise on the part of the journals—and the physician who does not read regularly a large, well arranged journal will soon find himself as one asleep, while his compeers are fast leaving him behind in the race for knowledge and for business. For, disguise it as we may by sentiment, business must accompany achievement; business management must so regulate and be associated with the work of science and medicine as to afford the physician peaceful hours of leisure, and days unburdened with the humiliations of debt and with the effort to assume a cheerfulness which he cannot feel.

These thoughts suggest themselves in connection with the subject of the usefulness of this JOURNAL to the Profession. It is at this time of the year, when the future looks so important, though we stand still in touch with the past, that physicians speak to their friends of these things which have been to them most useful and which must accompany them into the future which is already with them. It is now that they will mention this JOURNAL to their friends, and say to them that while the weekly journals are easily mislaid, often lost, hard to distinguish from each other, too small to contain classical papers in any one number, but obliged to present them in several parts, GAILLARD'S MEDICAL JOURNAL has none of these drawbacks, and that when it reaches its readers its bright presence is not easily disguised, while its bulky form suggests many hours of quiet pleasure, and large stores of mental food and refreshment. Let the countersign between the JOURNAL and its readers be always *Nous Nous Soutenons.* "We sustain each other."

THE GRAND MEETING OF THE SOUTHERN SURGICAL AND GYNÆCOLOGICAL SOCIETY should have received editorial notice in this JOURNAL in the December number, but when that issue went to press the accounts of the meeting were neither so full nor so accurate as was necessary for publication. Since then several of the weekly journals have given an account of the meeting, and the *Virginia Medical Monthly* delayed its December issue in order to give a short abstract of the principal papers. We will of course wait for the publication of the volume of proceedings to appreciate the discussions which are said to have been full of interest. In the meantime, however, we have had the privilege of publishing in full, some fine and masterly papers which were read at the meeting. In the February number we will publish with illustrations the valuable paper of Dr. L. S. McMurtry, of Danville, Ky., one of the most accomplished physicians and cultivated gentlemen in the American Profession. The address of Dr. Hunter McGuire has been alluded to in some of the journals as being most graceful and interesting. Over the whole meeting was thrown the harmonizing influence of the gifted secretary, Dr. W. E. B. Davis, who deserves all credit and admiration for the manner in which he removed difficulties and facilitated work and pleasure.

The next Annual Session will convene in Atlanta, Ga., Tuesday, November 11th, 1890. The officers for the current term are: *President*, Dr. George J. Engelmann, of St. Louis, Mo.; *Vice-Presidents*, Drs. B. E. Hadra, of Galveston, Texas, and Duncan Eve, of Nashville, Tenn.; *Secretary*, Dr. W. E. B. Davis, of Birmingham, Ala.; *Treasurer*, Dr. Hardin P. Cochrane, of Birmingham, Ala.

THE RUSSIAN GRIP—EPIDEMIC OF SNEEZING.—Dr. R. Guitéras has made a report to the Health Department of New York City in regard to this epidemic, which has been expected here and looked for with interest. He reports five cases—all in the same house—ages varying from fourteen to forty, all Germans. They are not recent arrivals in New York, and are all in correspondence with friends in Germany, where the disease has prevailed. The onset is sudden, commencing with a chill; temperature rises from 100° to 105°; the eyes become watery; there is coryza, some laryngitis, slight pharyngitis, winding up with bronchitis. The duration of this is only a few days. The most pronounced symptom is the very great prostration which all of these patients have experienced. He thinks that if it is genuine influenza it is of a very light type. * * *

Since the above report, seventy-five cases are reported among clerks in the Post Office, where the disease first appeared in the Foreign Mail Department. There are many forms of the disease prevalent, and both the somnolent and that form characterized by insomnia are present often in the same family. New cases are being reported in vast numbers, but as yet none of a fatal character. Many cases are also reported in Boston and other cities of the Atlantic seaboard. Abroad the disease is becoming dangerous in some localities, particularly in Paris, but seems, on the whole, to be of a mild type. It is pleasant to say that in the history of the disease it has never been known to stay longer than six weeks in one place.

OUR subscribers cannot have failed to notice, with pleasure, upon our title page, the announcement of two associate editors, whose names are known to many of our readers. These gentlemen would have been most happy to have made their bow of salutation and New Year's greeting but for the fact that La Grippe requires their exclusive attention at present.

THE JOURNAL records with much regret the fact that Dr. J. Herbert Claiborne, Jr., has retired from active work in the Editorial Department. His association with the JOURNAL will, however, be continued, as he will now take his place among our honored collaborators, and will contribute from time to time to the Original Department.

ONE of the features of the JOURNAL most commended by the readers, and to be continued for the present year, is the Original Abstract Department, which is so ably and judiciously conducted by Dr. Kirkland Ruffin. It always contains a large amount of information in the most condensed form.

WHATEVER the New Year may have in store, we hope that it may be a Happy one for all of our readers.

Champagne ANALYZED

Of Interest to all Medical Practitioners.

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THOMAS KING CHAMBERS, M.D., F.R.C.P.
R. OGDEN DOREMUS, M.D.
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GAILLARD'S MEDICAL JOURNAL.

VOL. L. NEW YORK, FEBRUARY, 1890. No. 2.

CONTENTS.

ORIGINAL ARTICLES. PAGE.

Podalic Version in Contracted Pelvis. By Geo. Tucker Harrison, M.A., M.D... 111
The Surgical Treatment of Empyema, with Cases. By James A. Goggans, M. D., etc., Alexander City, Ala.............. 118
Doctors' Prescriptions and Druggists' Mistakes. By Dr. Von Beverhout Thompson................................ 125
Twenty Consecutive Cases of Abdominal Section. By L. S. McMurtry, A.M., M.D., of Louisville, Ky.............. 133

SELECTIONS.

Hydrophobia: A Short Account of the Disease and of Pasteur's System of Prophylactic Treatment—Practical Points in the Diagnosis and Treatment of Malaria in Children—The Early Diagnosis of Extra-Uterine Pregnancy..........143–183

ORIGINAL ABSTRACTS. By Dr. Kirkland Ruffin.

Introduction to a Discussion on Placenta Prævia—Report on the Intubation of the Larynx—The Introduction of a Discussion on Foods for Invalids and Infants.............................184–190

CLINICAL RECORDS.

The Treatment of Some Forms of Chronic Suppurating Kidneys by Perineal Puncture and Drainage—A Case of Persistent Hæmaturia, Treatment, Cure.......194–196

PROCEEDINGS OF SOCIETIES.

N. Y. Neurological Society.............. 197

SANITARY.

Heredity in Disease..................202–204

PHARMACY AND THERAPEUTICS.

Internal Employment of Resorcin in Whooping-Cough—The Physiological Action of Exalgine—Sympson on Glycerine of Borax in the Diarrhœa of Infants—Concentrated Solution of Magnesia Sulphate as an Enema, etc....202–207

REVIEWS.

The Surgical Treatment of Volvulus—The Evil that has been Said of Doctors—Saunders' Question Compends—Studies in Intestinal Surgery—On the Treatment of Diabetes by Free Phosphorus—The Disposal of the Dead—Concealed Pregnancy, etc..............208

MISCELLANEOUS.

Laparotomy for Hernia at Birth—Pathology of Severe Burns—Practical Points on Surgical Dressings—The Dread of Death...............................209–211

MEDICAL NEWS AND NOTES.

Electricity as a Death Penalty—Mirrors for Nervous Diseases—The Shuttle Pulse and its Portent in Practice—Nitrous Oxide and Ether—An Artificial Tongue—To Restrict Quackery in Maryland—The Christ Hospital of Cincinnati—Typhus Fever in New York...............................211–214

IN MEMORIAM.

Prof. James Lawrence Cabell, M. A., M.D., LL.D.....................214–215

EDITORIALS.

On Inflammation—La Grippe—Instruction for Graduates—Dr. T. Gaillard Thomas on Diseases of Woman....215–220

ORIGINAL ARTICLES.

ARTICLE I.

PODALIC VERSION IN CONTRACTED PELVIS.*

BY GEORGE TUCKER HARRISON, M.A., M.D.

No physician of large experience in obstetrics, to whose lot it has fallen to be often consulted in cases of narrow pelvis, can fail to have been struck with the hazy ideas the average practitioner possesses with reference to the therapeutical indications in such pathological conditions. As to when forceps, version, craniotomy, the cæsarean section or the induction of premature labor are indicated, his views are vague and indefinite. This is scarce to be wondered at seeing that so great a divergence of opinion exists among distinguished authors and teachers regarding the therapeutical doctrines of the narrow pelvis. However little then it may be in my power to enlighten this subject and to bring harmony out of discord, still, in view of its surpassing importance, any contribution, no matter how slight, resting upon careful and accurate observation ought to have its value. The oldest method of delivery in cases of contracted pelvis, when the natural forces were incompetent to surmount the obstacles at the brim, was the dismemberment of the child. From several passages in the writings of Celsus it would seem that this celebrated Roman author had knowledge of podalic version although his experience was doubtless limited. In one place he expresses himself as follows, "*Medico vero propositum est, ut infantem manu dirigat, vel in caput, vel etiam in pedes, si forte aliter compositus est.* It is suggested to the skillful physician to direct the child by the hand into the head or also into the feet (presentation), if by chance it is otherwise situated."* In another place he wrote: "*Sed in pedes quoque conversus infans non difficulter extrahitur; quibus apprehensis per ipsas manus commode educitur.* But the child also that has been turned into the feet (presentation) is not extracted with difficulty; when these are seized it is conveniently delivered by the hands themselves."† In head presentations, when there were obstacles to the birth, podalic version was practised by the Roman physicians in proof of which the following language of Philumenos may be cited, as quoted by Zweifel, "*Si caput fœtus locum obstruxerit, ita ut prodire nequeat infans, in pedes vertatur atque educatur.* If the head of the fœtus shall have obstructed the place so that the child is not able to go forwards, let it be turned into the feet presentation and delivered." With the destruction of the Roman empire its literary and scientific knowledge disappeared in the darkness that descended on the nations of Europe. It was therefore an inestimable boon that Ambroise Paré conferred upon humanity when he rescued from oblivion this method and recommended its use as a conservative measure in dystocia from pelvic contraction. In especial honor should the memory of *de la Motte* be held for the zeal and success with which he labored to perfect this procedure in order to avoid a recourse to the barbarous operation then in vogue, when childbirth was difficult, of mutilating the infant by means of the single obstetrical instrument at that time employed, "le crochet." He advised podalic version even in high degrees of pelvic contraction as the most successful method for mother and child. As epoch-making must be designated the writings of Sir James Y. Simpson on this theme—possessed of rare logical acumen, profound sagacity and masterly dialectic skill, he brought to its discussion such force and eloquence as to make his arguments invincible. At a meeting of the Obstetric Society of Edinburg, held on the 20th of January, 1847, he had an opportunity of showing to the members a large infant extracted on the previous evening by the operation of turning through a pelvis the brim of which was greatly contracted. The child to be sure was born dead, but the fact that the head passed the contracted brim undiminished gave him an incitement to further investigations. After narrating the history of the case he remarks: "The preceding case was, at the time of its occurrence one of intense interest to me in two points of view. For, *first*, it was the first case in which I or any other accoucheur had ever tried the effects of ether inhalation during labor, and so far it is, I believe, destined to form the commencement of a new and important epoch in obstetric practice. But, *secondly*, the case appeared to me to be one of great moment as an apposite illustration of views which I had been previously led to entertain, as to the possibility and propriety of substituting, in some instances, extraction by the feet for extraction by the crotchet—the delivery of the infant by the hand of the accoucheur instead of its delivery by instruments—the lateral compression of the child's head by the contracted sides of the pelvis, instead of its more dangerous oblique or longitudinal compression by the long forceps—and *above all, the transient and not necessarily fatal depression of the flexible skull of the fœtus for the destruction and necessarily deadly perforation of it.*" After discussing, at some length, in his usual felicitous manner, the subject of turning in all its bearings, he thus sums up and recapitulates the advantages obtained in contracted states of the pelvic brim by podalic version.

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* Read before the New York County Medical Association, October 21, 1889.

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* *Vide Zweifel Librbuch der Geburtshüefe, p.* 583.

† *l. c.* p. 583.

"1. The fœtal cranium is of a conical form, enlarging from below upwards, and when the child passes as a footling presentation, the lower and narrower part of the cone-shaped head is generally quite small enough to enter and engage in the contracted pelvic brim.

"2. The hold which we have of the protruded body of the child, after its extremities and trunk are born, gives us the power of employing so much extractive force and traction at the engaged fœtal head as to make the elastic sides of the upper and broader portion of the cone (viz., the bi-parietal diameter of the cranium) become compressed, and, if necessary, indented between the opposite parts of the contracted pelvic brim to such a degree as to allow the transit of the entire volume of the head.

"3. The head, in being dragged downwards into the distorted pelvis, generally arranges itself, or may be artificially adjusted, so that its narrow bi-temporal, instead of its bi-parietal, diameter becomes engaged in the most contracted diameter of the pelvic brim.

"4. The arch of the cranium or head is more readily compressed to the flattened form and size required for its passage through a contracted brim by having the compressing power applied, as in footling presentations and extraction, directly to the sides or lateral surfaces, than by having it applied, as in cephalic presentations, partly to the lateral and partly to the upper surfaces of the arch.

"Lastly, I may add, as a result of the whole mechanism, that the *duration* of the efforts and sufferings of the mother is greatly abridged by turning, when used as an alternative for craniotomy and the long forceps, and that thereby her chances of recovery and safety are increased."

Simpson's teachings met with a hearty reception in Germany, such eminent men as Scanzoni, Hohl and E. Martin contributing to enhance their scientific value. It was, however, mainly due to the brilliant and enthusiastic advocacy of these doctrines by Schrœder and Gusserow that they secured general recognition on the part of German obstetricians. The writings, especially of Schrœder, taking account, as they did, of the doctrines of the narrow pelvis founded by Michaelis, and further advanced by Litzmann, illumined this theme by fact and argument, meeting the requirements of strict scientific inquiry. In England, such high authorities as Barnes, Braxton Hicks, Leishman and Duncan employ version to a greater or less extent, while others equally well known give the preference to the high forceps operation.

In France, version has never been a favorite procedure, and especially since the introduction of the Tarnier forceps has it lost ground. Thus, Charpentier expresses himself as follows: "Version, even when practiced by a skillful hand, is always a serious operation, and we cannot better explain the gravity of version than by repeating here the words that we have several times heard pronounced by our Master Depaul: 'With my forceps I am absolutely tranquil, for I am sure of never inflicting an injury, while I never employ version without a certain dread.'"

In this country version has found comparatively few advocates, except within restricted limits. For the value of their contributions, the names of Taylor, Goodell and Lusk are worthy of especial mention. In his excellent text-book, the latter has discussed the subject in a spirit of judicial fairness.

In the *American System of Obstetrics,* the writer on Version, Dr. Cameron, in the section headed " Forceps *vs.* Version," speaks as follows : " Except in cases of considerable pelvic contraction, the forceps operation may be regarded as comparatively harmless in skilled hands, while internal version is always a serious undertaking, involving more or less danger for mother and child, even when performed with the greatest skill. The unpracticed operator is far less likely to do harm with the forceps than with version. Whenever, then, it comes to be a question of choosing between forceps and internal version, the forceps should be selected unless specially contra-indicated, because the operation will be easier, and at the same time safer for mother and child." More false doctrine, in my opinion, could hardly be embraced within the same number of sentences. Schrœder has shown in the clearest manner that this putting in contrast forceps and version is a glaring error, and ignores true obstetrical relations. When version is still practicable, the forceps is contra-indicated ; and when, on the other hand, the forceps is indicated, the time for turning has already passed. As Olshausen expresses it : " The forceps is adapted to the narrow pelvis in general as the fist to the eye, and has already done an immense amount of harm ; for example, because many a physician considers the head as already engaged in the pelvis when it is still above the brim."

The objections to the use of the forceps in high-standing head are mainly twofold ; in the first place, the forceps grasps the head in the fronto-occipital diameter, so that the tendency is to enlarge the transverse diameters which have to pass the conjugata, and at the same time to prevent the overriding of one parietal bone over the other ; and in the second place, it is not in the power of the forceps to accomplish the inflection of the bones, which is an important factor in the moulding of the head. As Olshausen rightly declares : " The forceps is, even in the hands of the most skillful obstetrician, but a rough instrument in cases of pelvic contraction, and can never substitute the mode of action of good pains. The necessary prerequisite for its application is, therefore, that the disproportion between head and pelvis is already completely or almost equalized ; that is, that the head engages with the greater periphery in the brim."

The advocates of podalic version in cases of contracted pelvis are divided into two parties, according as they respectively formulate the therapeutical indications. The one side, in the language of Spiegelberg, recommends "waiting, so long as the passage of the child's head appears possible and devoid of danger; when further delay is no longer permissible, in the interests of the mother, perforation and extraction with the cranioclast in high-standing head; forceps in the case of a living child, after the narrowed part has been surmounted; in unfavorable engagement at the brim, fixation not ensuing within a certain period, version and extraction."[1] The other side seeks to avoid the possibility of a perforation by a *prophylactic* version before any symptom of danger threatens the mother. This latter view had its chief exponents in Schrœder and Gusserow. My own practice for years has been based upon it, and I cannot too earnestly enforce the advantages to be derived from its adoption as the rule of practice. Long ago Simpson argued with perfect correctness that the degree of *duration* and continuance of labor was *per se* dangerous both to the mother and child, and very often fatal in its influence. He insisted also that every operation was the more dangerous the greater the length of time from the beginning of birth to the moment of artificial interference; or, as he expresses it: "The operation is dangerous and fatal in proportion to the length of time allowed to elapse before the artificial delivery is practiced." For these reasons he declares that in proportion as turning is practiced earlier, so far will it be attended by greater safety and greater success. The conditions most favorable for version, of course, are intact bag of membranes and completely dilated os uteri; often, however, the physician is not called to the case until the membranes have already ruptured, and this may have occurred prematurely. This premature rupture is especially to be deprecated in a contracted pelvis, as it renders the prognosis for mother and child more unfavorable, the explanation being that such an accident is more apt to occur in an early stage of the labor in a narrow pelvis. I concur fully in the opinion expressed by Nagel in his admirable essay, fortified as it is by careful and exact observations, that in a premature rupture of the bag of membranes version should be undertaken as early as possible, and that we should not wait for full dilatation. I must also heartily agree with this author, as my experience has led me to the same conclusions, when he lays down the rule of practice that in primiparæ, if the head has not entered the pelvis, the os uteri being fully dilated and the membranes intact, or delaying to do this after the rupture of the membranes, we should proceed to the performance of version, no matter whether, in the latter case, the os be completely dilated or not. In multiparæ we can wait somewhat longer, when the course of former births furnishes a hope of a natural birth of a living child. In the case of primiparæ, it is necessary, as a rule, to have recourse to version earlier than in multiparous women, as fixation takes place much sooner in the first. To quote the pertinent language of Schrœder: "Since podalic version and extraction, in cases of contracted pelvis, are especially to be advised in the interests of the mother; since, further, even in very narrow pelvis (almost up to 7 cm.) living children can be extracted; and since perforation of the after-coming head neither offers much greater difficulties nor more serious dangers for the mother than perforation of the preceding head, version may be recommended up to the limit of absolute pelvic contraction. We will have the pleasure now and then, in a conjugata v. under 8 cm., of delivering a child of medium size, and in the worst case will only have to perforate the after-coming head."

Such has been my experience in a number of cases. Moreover, it occasionally happens that the large diameter of the after-coming head is narrowed by a spoon-shaped impression, and so perforation is avoided.

It is true that we may hope to deliver alive only half of the children thus injured. It is all important, as influencing the result, that the after-coming head should be brought through the pelvis with as little delay as possible. Upon the best methods of accomplishing this the views of different authorities are at variance. The doctrines taught by Gusserow are in entire harmony with my experience. All are agreed that the head must be guided into the pelvis, and drawn through it with the chin flexed. The finger in the mouth of the child serves mainly to approximate the chin to the breast. A matter of supreme importance is the pressure from without through the abdominal coverings, traction on the trunk being made by the hand over the nape, according to the Veit method. My experience is entirely in accord with that of Nagel when he suggests the propriety of rotating the chin behind, when still in the inlet of the pelvis, so that the sagittal suture runs in one or the other oblique diameter. In this way I have repeatedly accomplished delivery in exceedingly contracted pelves.

This field is a large and fruitful one, and I have only attempted to gather a few of the fruits that hang in rich luxuriance in every part.

ARTICLE II.

THE SURGICAL TREATMENT OF EMPYEMA, WITH CASES.

By JAMES A. GOGGANS, M.D., of Alexander City, Alabama. Senior Counsellor of the Medical Association of the State of Alabama.

From the fact that pleurisy is one of the most common diseases of the respiratory organs which we must encounter in general practice, it seems to me that a short study of the form known as *purulent pleurisy*, or empyema, would be interesting to the members of this Society. The term *empyema* was originally applied to any accumulation of pus; but it is now restricted to pus in the pleural cavity.

Ancient writers from the days of Hypocrates and Galen, recognized and treated this disease by thoracentesis and thoracotomy. Still, their knowledge of the true pathology of the disease must have been quite limited.

Many times, since the days of the above-named writers, these operations have fallen into disuse; but thanks are due now to Trousseau and Bowditch for having removed almost all prejudice against them.

Formerly, one of the principal objections to the operation of thoracentesis was the fear of admitting air into the pleural cavity. It was thought that the contact of air with the pleura, in cases of sero-fibrinous pleurisy, changed the fluid into pus, and that in cases of empyema, the presence of air favored decomposion of the pus, resulting in the formation of deleterious gases, thereby increasing the prostration of the patient.

I believe, however, that most surgeons of the present day agree that the admission of a moderate quantity of air is not attended with danger; besides, another argument in favor of the operation is the fact of our having a great variety of improved instruments by which we are enabled to perform the operation without the admission of air. It is an undisputed fact, that the tendency of suppurative pleurisy is *never* towards recovery, except by spontaneous openings. This necessarily renders the prognosis exceedingly unfavorable. There is considerable room for differences of opinion as to the treatment of sero-fibrinous pleurisy; but not so with empyema. The diagnosis of purulent pleurisy having been made, first by the rational and physical signs, and verified by having drawn off some of the fluid, and subjected it to a microscopic examination, there is only one alternative, viz., to evacuate the pus by *some* means. The only exception to this rule is, where the empyema is a result of phthisis. It is stated by no less authority than Bowditch, that the mortality is increased by operating in these cases. I will state that the general conclusion of all surgeons of the present day is, that when pus is found anywhere in the body, that it must be let out. As to the mode of evacuating the pus, I think the profession is generally of the opinion, that thoracentesis by aspiration should be given a fair trial before resorting to thoracotomy. It is said to be eminently successful in children, and very often successful in adults. If aspiration is performed, nearly any modern instrument will do good work. I have always used Potain's Modification of Dieulafoy's Aspirator. It is of simple construction, and effectually prevents the possibility of air entering the pleural cavity.

Before making the puncture, the instrument should always be tested to see that its action is perfect by evacuating the receiver and immersing the point of the needle in water. The needle selected should be of good size, thoroughly cleansed and dipped into carbolized oil. Most authors recommend the sitting posture to be observed by the patient during the operation. However, if the circulation is weak, and the patient much emaciated, a dose of morphia should be administered hypodermically, and a moderate quantity of alcoholic stimulants given just before the operation, and the patient allowed to observe the recumbent posture. I have given the morphia to adults, and the camphorated tincture of opium to children, in every case before tapping, believing that the opiate very materially lessens the pain and shock caused by the introduction of the needle, as well as going a great way towards lessening the dangers of the operation from the sudden withdrawal of the fluid. The point selected for making the puncture must necessarily vary with the quantity of fluid present in the pleural sac. The general rule is, to select the lowest admissible point, unless there is bulging at some point on the chest walls, and then the puncture should be made there. If the sitting posture is to be observed by the patient, the body should be placed in as nearly an erect position as possible, except that it should be made to incline a little forwards with the arm of the affected side thrown partially across the chest, the hand resting on or about the opposite shoulder. The index finger of the left hand should be used as a guide for the needle by gently pressing it into the intercostal space at the point selected for making the puncture. Some surgeons advise that the puncture should be made by first cutting through the skin with a knife or lancet, and then introducing the needle. I don't see that this adds any advantage to the operation. The point selected for making the puncture should be thoroughly washed with some antiseptic solution, and the needle introduced by a quick motion, the point being directed a little downwards. By directing the point downward, we lessen the possibility of striking the lower border of the superior rib, or of puncturing the intercostal artery. The amount of fluid to be withdrawn at a single operation, will depend entirely upon the length of time the lung has been compressed. Our object should be to evacuate all the fluid possible without causing pain and dyspnœa. It should be allowed to flow away very slowly, and the operation should be terminated just so soon as the patient experiences the least uneasiness in the chest, however small the quantity withdrawn may be. By observing these rules closely, the lung has time to expand, and the dangers of pulmonary congestion are much diminished. Before withdrawing the needle the suction of the aspirator could be cut off by turning the stop-cock, thus lessening the dangers of drawing the septic fluid into the walls of the chest, which might result in septicæmia or the formation of fistulous openings. I have observed these rules as closely as possible in making 138 punctures for the relief of sero-fibrinous and purulent pleurisies, and I have never had a single accident beyond a slight cough and temporary dyspnœa. Some surgeons tell us exactly how many aspirations should be performed before resorting to thoracotomy. Richardson and Parker of London advise, that after two aspirations, if unsuccessful, incisions should be made. Flint and Austie advise that aspiration should first be used, and if not successful, then incisions should be made.

Bowditch states, there is no immediate call for thoracotomy, unless the pus becomes impure or the physical condition of the patient demands it. Statistics show that recoveries have taken place after from one to seventy-three aspirations. From this fact, I am obliged to adopt the plan of treatment as recommended by Dr. Bowditch as being the best of any that I have yet noticed. However, when the pus becomes fetid and the pleural cavity refills rapidly after aspirations, and there are evidences of hectic and rapid emaciation, thoracotomy should be performed at once. And another condition under which I would urge the operation of thoracotomy, is in any case where after one or many aspirations had been performed and there were symptoms of threatening perforation through the lung. Since I had occasion to perform the operation under these circumstances in one case, where there was some pointing, and the patient had severe attacks of coughing, and expectorated as much as one ounce of pus, of exactly the same quality as drawn from the pleural cavity just afterwards.

Repeated aspirations failed to relieve this patient, and thoracotomy was finally performed, and a good recovery was obtained. By making free incisions in such cases a double purpose is accomplished; 1st, thorough drainage, thus relieving the impending suffocation from the pressure of the fluid; 2nd, getting rid of the pus which is deleterious within itself. When spontaneous openings occur they are usually inadequate for perfect drainage, and counter openings have to be made, as the prime object is to have the pus escape as rapidly as it is formed.

The operation of freely opening the chest is a simple operation in one sense of the word, still one naturally revolts at such a procedure. When we refer to the statistics of the earlier operations we notice that it has several times been abandoned. The statistics of more recent years however, show such flattering results that the surgeon who now fails to perform thoracotomy under the conditions enumerated brings upon himself the responsibility of a very large mortality, even after there is pointing, which is an indication that the pus would soon be evacuated by a spontaneous opening. I do not believe that the chest should be opened by plunging a bistoury into the pleural cavity after the manner of opening a single abscess; but by carefully dividing the tissues down to the pleura, and then thrusting a grooved director into the cavity and dividing the pleura on the director. By so doing we lessen the dangers of puncturing the lung or dividing the intercostal or internal mammary artery. The point selected for making the incision should be at the most dependent point possible where the walls of the chest are thin, and this will generally be in the sixth, seventh or eighth intercostal space, just in front of the anterior border of the latissimus dorsi muscle. If, however, there is pointing at some other part of the chest walls, the incision should be made there. The performance of this operation demands some kind of an anæsthetic, either local or general. After making the incision which should be at least an inch in length, the fluid having escaped and air having been freely admitted in its stead, some kind of drainage tube should be introduced. I do not believe that the introduction of a double drainage tube, as recommended by some, is necessary. I have used pieces of male catheter, silver tubes with a protecting collar, piece of soft rubber and on one occasion used a large sized Gruber's ear speculum, after shaping it so that it would pass between the ribs readily. I think the soft rubber tubing is far preferable to any of these articles. The dressing should be applied as quickly as possible after the operation is completed and should consist of several layers of antiseptic gauze, which should be renewed as often as two or three times in every twenty-four hours. The patient should be instructed to keep constantly changing the position of the body, and using forced inspirations, thereby completely evacuating the pus from the pleural cavity as rapidly as it is formed, thus allowing its size to be constantly diminished, and finally to become completely obliterated.

There is a difference of opinion as to the advisability of washing out the pleural cavity after the operation of thoracotomy. Sir Joseph Lister and Professor Loomis are much opposed to it. Most authors, however, speak in the highest terms of washings, claiming that the dangers of septicæmia are much diminished, and the abscess cavity much more quickly obliterated. I have never resorted to medicated washes, but contented myself with using warm water that had been boiled. I believe this to be the very blandest wash that can be used.

Illustrative of this plan of managing empyema, I will give the histories of three cases occurring in the same family at the same time. They were cases of influenza complicated by pneumonia, pleurisy and empyema.

Case I.—Male æt. seven years. Had influenza, complicated by pneumonia, in March 1889. On April 27th pulse 98, temperature 99½°, decided dullness over the right side of the chest; removed by aspiration 4 ounces of pus. May 2nd, pulse 102, temperature, 102½°, removed 8 ounces pus from between seventh and eighth ribs in the axillary line. May 5th, 9 A.M., pulse 110, temperature, 99 1-5°, removed 4 ounces of pus. May 8th, pulse 115, temperature 100 4-5°. Has considerable cough with some expectoration, removed 6 ounces of pus. May 9th, pulse 76, temperature 98°, slept well last night, calls for food May 10th, pulse 100, temperature 99 3-5°, removed 3 ounces of pus. May 11th, pulse 96, temperature 98 2-5°, takes plenty of nourishment. May 12th, pulse 100, temperature 99½°, has taken too much food and passing blood from the bowels. May 13th, pulse 130, temperature 102 3-5°. May 14th, pulse 100, temperature 99 2-5°. May 15th, pulse 110, temperature 99 2-5°, removed 1 ounce of pus. May 17th, pulse 115, temperature 102 1-5°, removed 3½ ounces of pus. May 18th, pulse 100, temperature 99°, much more comfortable. May 19th, pulse 118, temperature 102 3-5°, removed 3 ounces of very thick pus. May 21st, pulse 90, temperature 98½, removed 1 ounce of pus. May 23rd, pulse 120, temperature 100 1-5°, removed one ounce of thick pus. May 28th, pulse 100, temperature 98 3-5°. There has been considerable improvement since the last aspiration. May 30th, pulse 84, temperature 98°. He is much better, able to sit up in bed. June 4th, pulse 90, temperature 98½°. He is up and walking about the room. From this time he made a rapid and complete recovery. There were in all eleven operations performed.

Case II.—Male patient æt. seventeen years. Had influenza and pneumonia, followed by abcess of the lung, which discharged large quantities of pus by expectoration, from April 10th to May 28th, 1889. On May 29th cough had entirely ceased, pulse 110, temperature 100°, circumscribed dulness over the abcess cavity about the middle of left side of the chest. Removed by aspiration 6 ounces of very offensive pus and got all that would flow through the instrument. There was no cough nor distress of any kind when the operation was completed; but the cough was set up in one hour afterwards, and he expectorated 8 or 10 ounces of very offensive pus within the next twelve hours. May 30th, 8 A.M., pulse 88, temperature 98°, expectoration has entirely ceased and he is very comfortable. May 30th, 7 P.M., pulse 84, temperature 97½°. May 31st, 7 P.M., pulse 72, temperature 97 1-5°. Still no expectoration.

Great retraction of the chest walls in the locality of the abscess.

June 8th, pulse 80, temperature 98½°.

He made a complete recovery.

Case III.—Male patient, æt. 20 years.

Had influenza, and on March 16, 1889, had a chill and developed pneumonia in the right lung. There was no decided crisis, and on April 12th removed 13 ounces of pus from between the seventh and eighth ribs in the axillary line. At this time pulse was 92, temperature 101°. The cough had ceased. When 13 ounces of pus were removed, he had some constriction about the chest, and the operation was ended.

April 14th, pulse 90, temperature 99 1-5°. Has slept well since the operation. April 15th, pulse 96, temperature 99 1-5°. Has had to have morphine to procure sleep; removed 6 ounces of pus, when the operation had to be terminated. April 16th, pulse 84, temperature 99 4-5°. Has slept well since the operation. April 18th, pulse 92, temperature 100°. Symptoms of re-accumulation; removed 32 ounces of pus; the puncture was made in front, between the fourth and fifth ribs.

April 19th, pulse 80, temperature 98½°, respiration 22. Is very comfortable this morning. It will be useless to give the daily record of this case, since it would fail to be interesting from the great length of time through which it extended. Suffice it to mention that up to July 15th, 45 aspirations were performed, and 351 ounces of pus had been removed. On July 15th, removed 8 ounces of very offensive pus. Thoracotomy was advised; but the patient would not consent to the operation. When the forty-ninth operation had been performed the fœtor had entirely disappeared.

The work of removing the fluid by aspiration continued to the seventy-third operation, when 500 ounces of pus had been removed. The operation of thoracotomy was then urged, and was performed on September 14th. At this time the pulse was 112, temperature 99 1-5°. Ice was used as a local anæsthetic. An incision, about an inch in length, was made through the skin and other tissues down to the pleura between the fourth and fifth ribs in front. A grooved director was then thrust through into the pleural cavity, and the pleura divided on the director. The point in front was selected because there was some pointing there; 5 or 6 ounces of pus escaped, and air was freely admitted in its stead. A piece of soft rubber drainage tubing was introduced, and the dressing applied, which consisted of several layers of antiseptic gauze. From the day of the operation to October 1st, about two ounces of pus were discharged per day. The pulse was then 110, temperature 100°; commenced to irrigate the abscess cavity with warm water, October 1st.

November 1st, pus cavity has been irrigated since October 1st, now holds only a drachm or two of fluid, no pus discharged, only what would come from the track of the tube. November 8th, patient still wearing the tube, and able to walk a mile or two.

If he continues to do well, I think that the tube can be removed in a short time. Several times during the treatment of this case, it appeared as though he would certainly recover under the use of the aspirator, when there would suddenly be a renewal of the pleuritis, followed by an abundant secretion of pus. This patient had a hypodermic of morphia, and a potion of brandy before every operation that was performed.

Of course, during the progress of such cases as these, cod-liver oil, syrup of the iodide of iron and other tonics are indicated and they were administered.

ARTICLE III.

Doctors' Prescriptions and Druggists' Mistakes.*

By Dr. Von Beverhout Thompson.

Mr. President and Gentlemen :

This subject is of vital interest and importance, and to my mind has not received as much attention from the medical profession as it justly deserves. That mistakes have often occurred in the past, and will continue to occur in the future, in writing prescriptions and in dispensing drugs, is only too true, and is well worthy of our consideration.

It is, unfortunately, not very uncommon to read in the public prints the startling announcement of the death of some man, woman, or child, caused by the mistake of a drug clerk, or from the administration of some medicine prescribed by the medical attendant. Not only are the lives of patients endangered by disease, but they are also in danger from the careless handling of drugs, and what is equally culpable, the careless writing of prescriptions.

I will endeavor to point out some of the causes of the mistakes made by druggists, and the carelessness shown by many physicians in writing prescriptions, the errors that are likely to arise, and the difficulties with which both the doctor and druggist have to contend.

In the first place, I will state that the relations of the physician and pharmacist should be most harmonious ; the duties of the one to the other are imperfectly understood, or not fully appreciated. There should be more professional courtesy governing their intercourse, the cultivation of a better feeling ; an ethical code, either expressed or written, I think, might be advisable.

The New York College of Pharmacy has a standard of scholarship of which none of us need be ashamed, and every pharmacist in this city is obliged by law to be a graduate of a pharmaceutical college, or receive a license from the Board of Pharmacy, before he can engage in the duties of his calling. Now, then, in sending our prescriptions to a pharmacist who is not a mere vendor of drugs, but a professional man, with a diploma from an accredited college, we should aid him in every way possible to dispense them with the utmost care and judgment ; and we have a right to expect that he, too, should aid us in every way possible, dispense the very best drugs, prepared in the most accurate manner, and neither by his words nor his actions afford any opportunity for suspicion or doubt; and the aim of both should be to work harmoniously and conscientiously together, thus inspiring confidence in each other, and the confidence of the public will certainly follow.

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* Read before the County Medical Association, Dec. 16, 1889.

In framing a code of ethics, to which so many of our professional brethren object, I shall offer some suggestions which, I think, such a code should embrace, for the guidance of the physician and pharmacist:

1st. The physician should write legibly and carefully; state if the prescription be intended for an adult, child, or infant; state the dose always, and give the most explicit directions, and make every explanation necessary for the proper compounding of his drugs.

2d. The physician should inspire his patient with confidence in the pharmacist, and should not influence him to give up any pharmacist who is careful and conscientious.

3d. The physician should have no interest whatever in the profits of any pharmacy, nor should he place a price or valuation upon any prescription.

1st. The pharmacist should be most conscientious and careful, use only the very best drugs, and combine them in the most accurate manner.

2d. The pharmacist should communicate personally with the physician if he be in the least doubt or uncertainty about a prescription, as to the ingredients, the dosage, or the directions.

3d. The pharmacist should give no advice whatsoever, make no comment, nor should he offer any suggestions.

I will now endeavor to analyze and illustrate the rules which I have here presented, and in the order named.

In the course of my professional career I have had access to the prescription files of a great many druggists, and have studied the prescriptions written by a large number of medical men in Baltimore, Washington and New York, and it is surprising and remarkable how few write legibly. Some very prominent and influential physicians write so badly it is almost impossible to read their writing. The chirography should be so plain that it should be read at first sight. How often it happens that all the assistants in a drug store are called upon to decipher the hieroglyphics, abbreviated and scratched off hurriedly upon some bit of paper, that is so handled and crumpled it is almost impossible to guess even at its meaning. Some prescriptions are puzzled out by the druggist, when perhaps only one ingredient can be made out, by knowing certain drugs that are commonly combined together; medicines have been put up and taken by patients that were never intended, and if no evil results have followed, the mistake may never be discovered.

Carelessness in writing illegibly is not the gravest fault we have to avoid, but carelessness as to the dosage of drugs; poisonous doses have been prescribed by men eminent in our profession. It is not my intention in this paper to display and exhibit doctors' prescriptions, or to treat of ignorance, but to show the carelessness displayed by many doctors in writing and prescribing; and for that purpose solely I have selected only two or three prescriptions to illustrate my meaning:

"℞
Hydrargyri bichloridi - - - gr. x
Signa. Take at bed-time, and a seidlitz powder in the morning."

In this prescription the seidlitz powder in the morning could be dispensed with. I imagine in the the mind of this physician calomel was intended; and yet when he wrote hydrargyri, instead of following it up with and writing chloridi mite after it, by some inconceivable mistake he wrote bichloridi. Now, this physician knew as well as any one that hydrargyri bichloridi meant corrosite sublimate, and if he were shown this prescription no one would display greater surprise and astonishment.

"℞

Fl. ext. valerian - - - -	℥ss
Tr. lupuline - - - - -	℥j
Spts. lav. C - - - - -	℥ss
Hydrate of chloral - - - -	ʒiij
Morph. sulph. - - - -	ʒi

M. Teaspoonful every three hours."

Here we see prescribed by this physician about 3¾ of a grain of the sulphate of morphia at a dose every three hours, besides the chloral, valerian and lupuline.

"℞
Liq. Opii. Co (Squibb's).
Signa. "For diarrhœa or cramps." Teasponful in water when required."

There are two preparations made by Dr. Squibb, which are sometimes confusing to the doctor and confusing to the druggist. One is the Liq. Opii. Co, and the other is the Tr. Opii. Co. The formula for the first was published in the *American Journal of Pharmacy* for March, 1860, and then represented the average strength of the officinal tincture of opium.

In 1880 this formula was revised and made stronger when the strength of all the other opium preparations was increased, and now has the present strength of 7½ grains of the sulphate of morphia to the fluid ounce, so that a teaspoonful represents the strength of nearly one grain of the sulphate of morphia, the dose prescribed here. The Tr. Opii. Co (Squibb's) contains the strength of about the ¼ of a grain of the sulphate of morphia to the teaspoonful, and was the preparation the doctor had in his mind, most probably, when he wrote this prescription.

With all due respect to Dr. Squibb, one of our highest authorities, I think these two preparations are unfortunately named, as apt to be misleading. The Tr. Opii. Co. contains Tr. Opium, Tr. Camphor, Tr. Capsicum, each a fluid ounce, chloroform ʒiij, and sufficient alcohol is added to make the whole measure five fluid ounces. The formula for this preparation was published by Dr. Squibb during the cholera times in the *American Journal of Pharmacy*, 1866. The importance of giving the dose and the directions is fully illustrated in this prescription, intended by the doctor for Squibb's mixture. Had not the dose and the directions been given, the druggist would not have discovered the mistake.

Then, again, there are errors made which are not so glaring, but from their obscurity are all the more dangerous.

"The physician should state if the prescription be intended for an adult, child, or infant." How is the druggist to know if a prescription be intended for an infant unless so stated? For instance, some years ago a learned professor wrote a prescription containing the tr. nux vomica; the dose was not excessive for an adult, and there was nothing unusual about it to attract the attention of the pharmacist; the pharmacist, however, who was an exceedingly careful man, noticed the signature of the physician, and having heard that he treated diseases of children, thought that the prescription might be for a child; the pharmacist called upon the physician and discovered that the prescription was written for an infant, and if taken as prescribed, the amount of strychnia the dose contained would have caused a serious result.

A very careful and conscientious pharmacist said to me: when a druggist receives a prescription which he cannot read, or one wherein the doctor has ordered a poisonous dose, or a larger dose than usual, he generally tells the bearer it will take some time to prepare, takes the name and address of the patient, and says he will send it as soon as possible. He then hurries an assistant off to the doctor, who may live in a distant part of the city, and nine times out of ten is not at home, and will not return for several hours. When the assistant returns to the pharmacy, he will be apt to find a messenger from the patient for the medicine, and if the druggist does not use considerable diplomacy in making excuses, the messenger will become alarmed, fearing the doctor or the druggist has made some mistake. If the doctor be at home, the chances are he is engaged, and the assistant has to wait a half hour or so, thus consuming his time, which is valuable, and causing delay, when the patient may be in immediate need of the medicine. The interview with the doctor is not always pleasant; the first thing he does is to tear up the prescription, thus destroying all evidence of his mistake and tosses over a new one to the assistant, and probably does not even thank him for his care and trouble.

The physician should bear in mind that if he make any mistake the pharmacist is his only check, and should consider himself extremely fortunate in having the pharmacist to call his attention to any error or inaccuracy. I have heard it stated by druggists that in some few instances, when they have pointed out to the doctor any mistake, he has never allowed his patients to patronize them again.

"The physician should have no interest in a drug store," as he cannot practice medicine and surgery and also devote his time to pharmaceutical pursuits. Either be a physician or else be a pharmacist; if a physician, then leave to the pharmacist all the emoluments and profits that his skill and experience may bring him. The physician should be paid for his *advice*, and not for his *drugs*, and the pharmacist should be paid for his *drugs* and not for his *advice*. Patients are naturally suspicious. I have heard them remark, when they thought a doctor prescribed very much, wrote long prescriptions, or changed them often, that he had an interest in a drug store. This remark may have several meanings, may be said in jest, or they may really believe that he gets a commission, or that he prescribes many drugs, with the hope that some one of the number may prove of benefit. On one occasion a doctor was asked by a patient why he used so many medicines in his prescription; the doctor thought a minute, then replied: "Don't you know sir, that the disease will take the one it likes the best." On another occasion an Irish doctor was called in consultation to see an Irish woman, and prescribed no medicine at all; the woman objected, and when he asked for his fee, she answered, "Be jabbers, and for what!" His quick reply was, "Faith, and for the talk I have geen yee!" Here we see portrayed the two extremes, in the one case the surprise when many drugs were used, and in the other case the astonishment and dissatisfaction when no drug was given.

"The physician should not place a price or valuation upon a prescription." Cheap drugs may mean dear drugs. Why should a patient hesitate to pay a few more cents, or a few more dollars, for the knowledge and skill of the pharmacist, and for the freshness and purity of his drugs.

AS TO THE PHARMACIST.

It behooves the pharmacist to remember that no mistake is likely to be rectified after the prescription leaves him, and that it is most important to surround himself with all the safeguards that experience teaches. It has been proposed to separate all the stronger poisons from the weaker poisons, keeping them in peculiar shaped bottles, and kept in a closet set apart; that one assistant should prepare a prescription and give it his undivided attention, and that another assistant should go over the entire prescription with him, and both verify every ingredient, its quantity, the dosage, and the directions, before it is delivered to the patient. Mistakes are not always confined to careless and incompetent men; some of the most careful and best educated pharmacists have made mistakes; and in accounting for them, if it were possible to do so, perhaps worry, fatigue, due to their long, tedious hours, overwork, interruptions, endeavoring to put up a prescription, and then stopping to sell a glass of soda water, a tooth brush or a cake of soap, all these may be considered as so many factors.

A very tragic case of poisoning occurred in Baltimore some years ago. A well-known druggist put up in a mixture the cyanide of potassium instead of the bromide, with a fatal result, and when informed of the fact, and the vial was taken and shown to him, he excitedly denied making any mistake, and said, to prove his innocence, he would take the entire contents of the bottle himself. He hastily drank the mixture and he, too, was soon a dead man.

"The pharmacist should use only the very best drugs." That this is not always done we know, not only from our own personal experience, but from the experience of others; some druggists keep drugs of a poor quality, buy inferior grades, and sometimes substitute, and in this way effectually thwart the best directed efforts of the most skillful physician.

Preparations and drugs deteriorate by age, pills harden and often will not dissolve in the digestive fluids. Tincture and fluid extracts evaporate and their strength is increased, and in this way become dangerous and uncertain. Indeed, a whole volume might be written upon the deterioration of preparations and drugs from age, and the chemical action of heat, light and air.

Prescriptions should be prepared, combined and dispensed in the most accurate manner.

A few years ago I was called one evening to see a gentleman at the Breevort House, with a sore throat (tonsilitis), and, in addition to a gargle, I prescribed soap liniment as an external application. Imagine my surprise and astonishment the next morning to find his neck very much blistered. I then examined the liniment, which had been rubbed upon the neck, and found it smelled of ammonia. The maid servant was questioned, and she said the druggist had put hartshorn in it. The patient and I naturally were very much incensed, and we both called upon the druggist for an explanation. He said: "The lady who brought the prescription" (who, by the way, was a very officious English servant) "had asked him if that liniment was good for a sore throat, and that she said hartshorn was good in liniments, and requested him to put some in that." Now this druggist not only had the effrontery to add aqua ammonia to my prescription, but also had the audacity to number the bottle and put my name to it.

By communicating personally with the physician the pharmacist clears up any point of doubt, and thus pursues the safest and wisest course.

As soon as the druggist begins to prescribe and give advice, then so soon does he lose the respect and confidence of the physician, and the confidence and respect of the patient. And he should make no comments. Unpleasant experiences have arisen from a thoughtless remark. About eighteen years ago the visiting physician of the Central Dispensary was attending a child with cerebro-spinal meningitis, and ordered a fly blister applied to the cervical region. The druggist who prepared the blister asked who was sick. The father replied that his child was ill, and the doctor thought the child would die. The druggist thoughtlessly remarked that the blister appeared to him rather large. It was made, however, and applied. The child died. A death certificate was given. The father began thinking of what the druggist had said, and called in counsel some wise old women; and they decided that the blister had killed the child. They called upon the coroner and stated their belief, and insisted upon an investigation. He sent his deputy with them, who, after seeing the body and hearing the facts of the case, refused to interfere. The father afterwards went crying to the doctor, and begged his pardon, and excused himself by saying the women had set him crazy.

The mania for prescribing, recommending and suggesting remedies is not confined to a few druggists, but pervades all classes of society. One very clever society woman whom I attended had many friends and admirers who sent her all kinds of delicacies and all sorts of remedies. One good, kind-hearted lady took her several pint-bottles of medicine, and a whole suit of buckskin clothes, lined with metals, and said to electrify the most inanimate body, patented and warranted a *sure cure.* This patient kept a list of all these remedies for her amusement and my edification. Among the ignorant classes this same fondness for recommending remedies prevails, with this difference: they not only prescribe, but they do find ignorant persons who are willing to take their prescriptions; and the medical attendant, perhaps, wonders why the patient does not improve or get well, as he had every reason to expect, until it is discovered that some kind friend has caused the mischief and made the patient worse.

Then again, let a patient find that a prescription has relieved, or cured him, which is the term generally used, and so as to avoid paying a doctor's fee, he sends and has it renewed, whenever in his opinion the same condition exists; and he not only takes it himself, but he gives it to his friends.

Some persons, in their anxiety to be cured of their ailments, will often lose whatever good judgment they may otherwise possess, and will even buy a hair restorer recommended and sold by a bald-headed barber, and warranted by him to make the hair grow on any head; and this is the sublimest example of the faith cure on record.

The indiscriminate repetition of prescriptions is pernicious; as we all know the morphine, the chloral, the cocaine and the alcoholic *habits* have often originated in this way, and prescriptions which are apparently harmless to repeat, nevertheless when continued produce certain disturbances of the system which are harmful. For instance, a prescription is given a patient to relieve pain, produce sleep or quiet nervousness, or for any other diseased condition. Long after the remedy has accomplished all the good that the medical attendant gave it for, the patient keeps it up, and has it repeated again and again. Before closing my remarks, I wish to call your attention to the vast number of pharmaceutic preparations which are constantly being brought to your notice. Scarcely a day passes that some preparation is not left for your inspection and approval. Many large and flourishing manufactories have sprung up of late years, and, starting in our eastern cities, have spread to all the larger cities of our entire country. The number of pharmaceutical preparations that druggists are obliged to keep in stock to fill the prescriptions of physicians alone is truly astounding. These preparations are also sold to the drygoods merchants at a reduced rate, and are advertised by them at very low figures, as an inducement for the public to call, inspect, and buy their goods and wares; and, in some instances, I am informed, are sold for less money than they can be bought from the wholesale druggist. With this great and unfair competition in pharmaceutical preparations, and in drugs of many kinds, it is almost impossible for the pharmacist of the present day to subsist without dealing in various kinds of merchandise, postage stamps, knives, scissors, and fancy articles of all sorts. Is the professional pharmacist fast passing away? or will we have evolved out of this chaos the true pharmacist of the future? One who will exclude all kinds of proprietary articles and merchandise and deal only in the standard officinal preparations and drugs, freshly prepared, and combine them for each and every individual patient. In the past the late Dr. Neergard endeavored to follow this ideal. Now to whom are we to look in the future? Will not some wealthy and influential pharmacist take this ideal as his type, and give us a professional standard which we all will honor and respect.

In conclusion, I will state that if I have succeeded in impressing upon you the importance of this subject, in this very homely and imperfect paper, in which I have endeavored to be fair and impartial; and if the few rules I have here formulated for the guidance of the physician and druggist were observed, I believe that a better feeling would prevail, and fewer lives would be jeopardized.

ARTICLE IV.

TWENTY CONSECUTIVE CASES OF ABDOMINAL SECTION.*

By L. S. McMurtry, A.M., M.D., of Louisville, Ky., Ex-President of the Kentucky State Medical Society, Fellow of the American Association of Obstetricians and Gynæcologists; Fellow of the Obstetrical Society of Edinburgh, etc.

When requested by our distinguished President to contribute a paper to the proceedings of this Association, it occurred to me that I might best utilize the time placed at my command by a collective review of a series of cases illustrating a variety of pathological conditions and operative measures in abdominal and pelvic surgery. The cases here tabulated comprise the first twenty abdominal sections performed by myself, taken consecutively, and are reported as a basis for a thorough discussion of this important class of surgical and gynæcological cases.

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* Read before the Southern Surgical and Gynæcological Association, at Nashville, Tenn., Nov. 13, 1889.

All these cases were in private practice, and with two exceptions all the operations were done at the homes of the patients. Two cases were treated as private patients in a well-appointed hospital. In every case operative treatment was resorted to only after all ordinary and so-called conservative methods had failed, and in several instances the operation was not accepted until the patient's condition was regarded hopeless both by the family and attending physician. In no case, however desperate and complicated, have I refused to operate. Considering the gravity and variety of the pathological conditions, and that all were *late* operations, the results are as good, I believe, as any yet attained. These results confirm the fact demonstrated by Price and others that abdominal work can be executed as successfully in the homes of the patients as in special and private hospitals.* Indeed an airy room, thoroughly cleaned, in a country home, is the ideal location for abdominal surgery. The hospital may subserve the surgeon's convenience, but it yields no special advantage to the patient. With the growth of experience, both the operative technique and the after treatment have been constantly simplified. When the surgeon has done his work thoroughly, active interference is rarely necessary in the after-treatment. Neither medicines nor active nursing are required. Beside the care of the drainage-tube, and the administration of a purgative, there is little else for nurse and physician to do. Indeed, as a rule, the patient will do best when kept quiet and let alone after being put to bed.

In this series of cases the difficulties attending the diagnosis of intra-abdominal disease have been well illustrated. Case No. 7 was diagnosticated by four different surgeons as ovarian cyst before I saw the patient. The history and physical signs were characteristic of ovarian cyst. On opening the abdomen it was found to be a case of encysted dropsy, the result of tubercular peritonitis. Evacuation and irrigation were followed by quick recovery. Although the peritoneum

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* Vide Report of Seventy Consecutive Abdominal Sections performed at the homes of the patients, with one death. By Joseph Price, M.D., in *Pittsburgh Medical Review*, for October, 1887, p. 268.

No.	Age.	Pathological Condition.	Adhesions.	Drainage.	Result.	Remarks.
1	32	Ovarian Cyst.	Slight.	No.	Recovery.	
2	29	Ovarian Cyst.	Extensive.	No.	Recovery.	Very large tumor; omental and intestinal adhesions.
3	27	Ovarian Cyst.	Extensive.	No.	Recovery.	
4	31	Ovarian Cyst.	Dense and Extensive.	Yes.	Recovery.	
5	29	Cirrhotic Ovaries and Chronic Salpingitis.	Dense.	No.	Recovery.	Ovaries and tubes removed; patient had been an invalid for years. Complete cure.
6	17	Cancer of Intestines.		No.	Recovery.	Operation purely exploratory; caput coli and ileum a cancerous mass; patient died soon after from the disease.
7	68	Tubercular Peritonitis; Encysted Dropsy.		No.	Recovery.	Patient in good health 3 years after operation.
8	35	Suppurating hæmatocele, peritonitis.		Yes.	Recovery.	
9	35	Pyosalpinx and General Purulent Peritonitis.		Yes.	Recovery.	Appendages removed; drainage tube kept in 28 days; complete recovery.
10	31	Typhlitis, Perforative Peritonitis.		Yes.	Recovery.	Double perforation of cæcum; purulent peritonitis; first case of non-traumatic perforation on record saved by laparotomy.
11	34	Extra-Uterine Pregnancy.		Yes.	Death.	Large fœtus, past viable period; dead and decomposing; septic symptoms preceded operation. Death from hæmorrhage.
12	28	Tubercular Peritonitis.		Yes.	Recovery.	Patient died afterward with pulmonary lesions.
13	31	Large Ovarian Cyst; Pyosalpinx on opposite side.	Universal and Dense.	2 Tubes.	Recovery.	Patient *in extremis* at time of operation from peritonitis; irrigation of peritoneum for ten days. Complete cure.
14	27	Cirrhotic Ovaries.	Dense.	No.	Recovery.	Ovaries and tubes removed; patient invalid for six years prior to operation; convulsions; opium habit; marked improvement.
15	29	Uterine Myoma; soft and œdematous.	Extensive.	No.	Recovery.	Supra-vaginal hysterectomy; mass weighed 21 lbs.; œdematous; severe pressure symptoms; extra-peritoneal pedicle; prompt and complete recovery.
16	39	Double Ovarian Cyst.	Dense.	Yes.	Death.	
17	36	Ovarian Cyst.	Dense.	Yes.	Recovery.	Had been tapped with trocar four times; very large cyst, weighed 42 lbs.
18	40	Ovarian Abscess and Pyosalpinx.	Dense.	Yes.	Death.	Patient *in extremis*, emaciated, night-sweats; pigmented skin; very large abscess cavity; death ten days after operation.
19	29	Extra-Uterine Pregnancy.		Yes.	Recovery.	Ruptured Tube; pelvis filled with blood-clot. Complete recovery.
20	36	Cystic Ovaries; Chronic Salpingitis.	Firm.	No.	Recovery.	Appendages removed. Cure.

was studded everywhere with miliary tubercles, and the patient sixty-eight years of age, this lady rapidly gained her flesh and strength, and now, three years after the operation, is enjoying good health and activity without any signs of abdominal disease. So far as I am aware no explanation as to how the operation arrests the tubercular process has been made. It is a clinical fact, however, attested by many operators and confirmed by the accumulation of experience in abdominal surgery. Van de Walker, Spencer, Wells, Croom and many others have recorded cases found in good health years after the operation. Some operators have dusted the infiltrated peritoneum with iodoform, others have irrigated with a solution of bichloride of mercury and other antiseptic solutions. It seems immaterial how the peritoneum is treated, so it be evacuated and cleansed. As a rule the operation has been performed upon a diagnosis of ovarian cyst.

The case of soft uterine myoma (No. 15), was also believed to be a cystic ovary. The tumor was very soft and heavily œdematous, so that it fluctuated distinctly. The history and general condition of the patient tallied with the deceptive diagnosis. It was only when the abdomen was opened that I realized that I was to do a supra-vaginal hysterectomy instead of an ovariotomy. I find this to be the uniform experience of other surgeons who have dealt with these cases. This lady was suffering severely from pressure symptoms, especially relating to the bladder and stomach ; was emaciated and failing fast in vitality. After turning out the tumor, I tied off and divided the broad ligament on either side down to the level of the internal os, and treated the pedicle extra-peritoneally with the *serre neude* as practiced by Bantock. The tumor *en masse*, including the body of the uterus, weighed twenty-one pounds. The patient made an uninterrupted recovery, and is among the best of my results.

Besides illustrating the difficulties of diagnosis, this series of cases also demonstrates the great variety in the complications one must expect to encounter in dealing with intra-abdominal affections. No two cases are alike, and unexpected difficulties are constantly presented to the operator—difficulties, too, which must be quickly recognized, quickly decided, and quickly met. In my cases prolonged and repeated attacks of peritonitis had occurred prior to the operation, hence adhesions and hæmorrhage were formidable and constant complications. Having learned that before opening the abdomen no accurate estimate can be made as to the extent and gravity of the complications to be met in any given case, I have made it a rule in operating to have at hand every preparation for every emergency, including as probable hysterectomy and suture of intestine.

It will be observed that seven (7) of the twenty (20) cases here reported were ovariotomies.

In every instance the cysts were large, and, with two exceptions, had been tapped several times. One was a suppurating cyst, complicated with pyo-salpinx on the opposite side (No. 13), with universal dense adhesions. In the course of the enucleation the abdomen was flooded with foul pus. Thorough irrigation, which by means of two drainage-tubes, one at the upper angle of the incision and the other at the lower angle, I was enabled by repeating every few hours for ten days, to rescue the patient. She made a perfect recovery, and remains in vigorous health at the present time.

The only death of the entire list of cases, which I believe could have been averted, is in Case No. 16. It was an ovariotomy. The patient's condition was extreme, the operation difficult and complicated; and through impure water furnished me while operating, septic peritonitis resulted. The source of the water was pure, but the vessels used for heating it were not properly cleansed and purified. Since that time I have made it a rule to use distilled water, sending a demijohn of five gallons to the house the day before the time fixed for operating. I also give my personal attention to the heating of the water, and see that thorough cleanliness is observed. My ovariotomies, with this one exception, resulted in recovery. All were complicated, and some were extremely difficult. In skilled hands ovariotomy is the most successful capital operation known to surgery. It may chance to be one of the simplest, or it may prove one of the most difficult.

The operations upon the uterine appendages are among the most trying in the entire field of pelvic surgery. To remove pus-tubes and adherent ovaries, buried in a mass of adhesions, and friable from cheesy degeneration and suppuration, is among the most severe tasks of operative surgery. Normal relations are destroyed by the exudation; the fingers must make a track to the floor of the pelvis, and blood and pus well up as the exploration and enucleation proceed. The sight gives no aid; the work is done wholly with the two fingers deep in the pelvis. Thorough work, irrigation and drainage constitute the only basis of success in these cases. My cases of tubo-ovarian disease illustrated several grades and varieties of these lesions. All the patients had suffered long and severely. In three cases large pus tubes were removed.

Numerous articles have of late appeared in the medical journals of this country animadverting against too frequent resort to the operation of removal of the appendages. That the operation has been too often done for dysmenorrhœa and vague nervous conditions I have no doubt. But in the criticism aroused by abuse of the operation there is a tendency to underrate and misjudge the work of those who apply the operation in its proper sphere by conscientious and skillful discrimination in diagnosis. Morever, there are many practitioners who do not operate at all, and who would by a constant plea of conservatism justify an expectant course of medication in a class of cases where operative interference furnishes the only hope of the patient. Cases of purulent salpingitis are treated as pelvic cellulitis without improvement, and with the danger of rupture and general peritonitis in waiting. In order to show some of the characteristic lesions of disease of the Fallopian tubes, I have had a photograph made of the specimens removed in one of the cases of double pyo-salpinx. The following cut is a faithful reproduction of the photograph. The right Fallopian tube had ruptured and discharged at least four ounces of pus into the peritoneum. The left tube was filled with pus when the photograph was made.

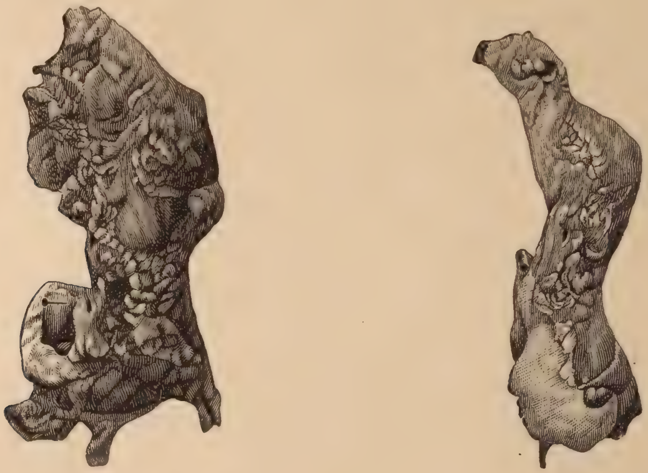

FIG. 1.
Fallopian Tubes, from a Case of Pyo-Salpinx.

The same condition is illustrated in the following figure, with the additional lesion of ovarian abscess. (Fig. 2.) From the writings of those so severely criticising the operation of removal of the appendages it is apparent that many are altogether unacquainted with these diseases of the Fallopian tubes and ovaries.

The one fatal case (No. 18) was in an extreme and wretched condition when abdominal section was done. The left tube and ovary were destroyed by suppuration, and had formed an immense abscess, filling the left side of the pelvis. She was septic and emaciated, with pigmented skin. An early operation would doubtless have saved her. These cases were formerly classified and treated as pelvic cellulitis. Thirty years ago Bernutz and Goupil described their true nature and pathology, but it is only of late that the importance of their researches have been appreciated. The intra-pelvic inflammation (peritonitis) is the result of infection, beginning in the endometrium and extending by continuity of surface through the Fallopian tube to the ovary. The infection in two of my cases was unquestionably gonorrhœal. In the others it was traceable to the puerperal state. The treatment of these cases by abdominal section, and removal of diseased and disintegrated structures, is one of the greatest of the many recent advances in pelvic surgery. It has opened up a new era in the treatment of a class of cases which have long been the opprobria of gynæcological practice. A want of careful selection of cases, and injudicious resort to removal of the appendages for vague neuroses by some, have done the procedure harm; but, properly applied, it saves life, restores health, and gives cures that are complete, with promptness.

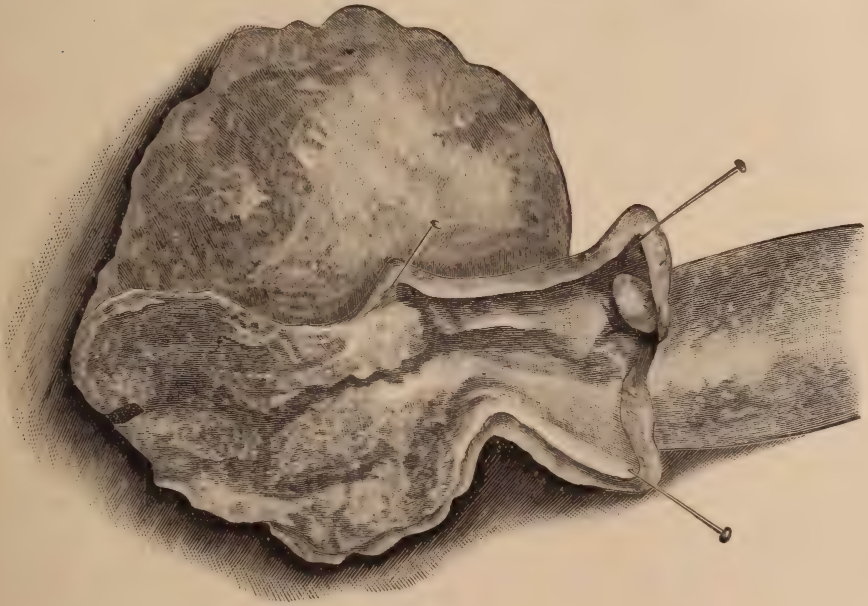

FIG. 2.

Pyo-Salpinx and Ovarian Abscess: Fallopian Tube laid open.

In Cases 8, 10, 13 and 19, operation was performed in the midst of active peritonitis, with vomiting, tympanitis, rapid pulse and elevated temperature. As soon as the patients recovered from the ether, after being placed in bed, small doses (two grains) of calomel were dropped on the tongue every hour until the bowels were freely moved. The action of this remedy, given in this way, under these circumstances, is almost like magic, and within a few hours puts a new and favorable aspect upon a desperate case. Irrigation and drainage were, of course, used in these operations.

The case of double perforation of the cæcum, with peritonitis (No. 10), I reported fully in the *Journal of the American Medical Association* for July 7, 1888, giving in detail the lesions found, the operation and the progress to recovery, together with the names of the physicians present. This is the only case on record wherein a non-traumatic perforation of the cæcum has been successfully treated by abdominal section and suture of the gut. I allude to the case here to say that now, after more than a year has elapsed, the patient, who is a physician, is in good health and actively engaged in the discharge of his professional duties. The case teaches the valuable lesson that prompt surgical interference is the only treatment in desperate cases of perforative peritonitis starting about the *caput coli*. It is only after the abdomen is opened that we can determine the exact character of the lesions, appendicitis, cæcitis, etc. To find the seat of the disease and deal with it upon sound surgical principles, cleanse the peritoneum and drain, is the method indicated. And this should be done before the patient is moribund.

In my first case of extra-uterine pregnancy (No. 11), the fœtus had advanced beyond the period of viability, and was dead before I saw the patient. The advent of septic symptoms made the operation imperative. The child was found dead and decomposing, and the membranes had been absorbed. Death occurred as the result of placental hæmorrhage. The desperate nature of these cases, and the problem of how to deal with the placenta, are so well known that I will not go into details.

My second case (No. 19) was a case of tubal pregnancy, in which rupture had occurred at about the ninth week. A week elapsed after tubal rupture before I saw the patient. On opening the abdomen I found the pelvis filled with an immense blood clot. I tied away the right appendage, along with the fœtal sac, irrigated and drained. The patient made a quick and complete recovery. It is now known that this accident is quite common, and every practitioner should be able to recognize it. Immediate operation, arrest of hæmorrhage and removal of the torn appendage, with the sac, are the steps necessary to save the patient. In the light of recent knowledge on this subject, there is a great work before the profession in connection with these cases of ruptured tubal pregnancy.

Whatever of success I may be permitted to claim for myself in abdominal surgery, I attribute it to two things: Close and unremitting attention to details in preparation for the operation, and thorough work in the operation itself.

In the preparation of the patient and the patient's surroundings, I have made it a rule to see to all details in person. In the cleaning of instruments, preparation of sponges and dressings, I do the work myself and spare no trouble or pains in having everything in a state of surgical cleanliness. Recognizing the fact that the worst results in abdominal surgery, together with the necessity for secondary operations and troublesome sequelæ, come from imperfect and incomplete work at the operating-table. I have in all cases nerved myself up to doing the work thoroughly even under desperate circumstances.

To cultivate habits of cleanliness in person and instruments, I have given constant attention; and to see that my patients and surroundings are thoroughly clean and kept so, until convalescence is complete, I have made a special care. As my experience has grown and observation extended, I have more and more simplified my technique, using fewer instruments, and relying more upon my fingers. All the time, however, I endeavor to be more rigid in my precautions against sepsis. This requires one to be both exacting and alert.

In my first cases, a solution of carbolic acid was used for sponges, instruments, ligatures, the operator's hands, and for cleaning the field of operation. For more than a year I have relied altogether upon thorough, painstaking cleanliness, with boiling water for sterilizing instruments and ligatures.

Prolonged anesthesia and exposure of the patient's surface are the prime factors of shock. Recognizing which I have striven to operate with increased expedition; aiming to do thorough, careful work rapidly, but not hastily. To accomplish this, preparation for the operation must be complete, and the attention of the operator concentrated on his work.

I endeavor to work through as small an incision as possible. Introducing two fingers, the nature and extent of the task before the operator is outlined.

If, after a careful survey of the field he decides it to be practicable to remove the diseased tissues or organs, and enters upon the work of removal, only under very exceptional circumstances should he stay his hand until the work of removal is completed. The greatest difficulties are encountered in dealing with adhesions and hæmorrhage. Unfortunately, the two go together, and to deal with them promptly and efficiently requires coolness, good judgment, skill and patience. Above all things the operator should keep his wits about him, and must not lose his head.

In every instance where fluid, *débris*, and clots are to be removed, irrigation with the gravity tube should be used. The cleansing is more thorough and more rapid than by prolonged sponging. To fill the abdomen with hot water, moreover, counteracts shock, and lessens and controls hæmorrhage from bleeding points.

Hot distilled water is poured into a funnel held above the table, while a rubber tube leads it through a proper nozzle, which the operator's hand directs into every nook and cranny of the deep pelvis and abdomen. Complete removal of the water is unimportant. Before closing the abdomen I make it a rule to secure by ligature any bleeding point in the omentum. I always examine the omentum for such points, and after making sure that all bleeding is arrested, spread it in its place before proceeding to close the incision.

As my experience has advanced, I find that I more frequently use the drainage-tube. This can be seen by referring to the table of cases. I have drained in more than fifty per cent. of my operations. In no case have I regretted its use, while in one case I was compelled to reopen the abdomen after the incision had healed firmly, because I failed to insert a tube. It is a good rule to always drain when one has any doubt as to its necessity. A very small glass tube is best, which for the first twenty-four hours should be emptied every hour, with a syringe.

In suturing the abdominal incision I use silk, and include all the structures of the abdominal wall, placing the stitches a half-inch, or three-fourths of an inch apart. I have not had hernia to follow the operation in a single instance. In one case a small fistula remained at the site of the tube for several weeks, but closed firmly without any interference or special treatment.

The after-treatment in my cases has been exceedingly simple. During the first forty-eight hours only sips of hot water are given. If thirst is intense I give a rectal injection of half a pint of warm water at intervals. On the third day the bowels are moved with a seidlitz powder or sulphate of magnesia. Broths and semi-solid food are then given in small and increasing quantities. Milk is not a suitable food for these cases; it clogs the bowels and favors gaseous distension and discomfort. Opium should be firmly and persistently avoided. The patient is much better without it, and, besides, taking all the symptoms, it does positive harm by locking the secretions, disturbing the stomach, and causing abdominal distension. The bowels should be kept open by frequent use of salines. Indeed, it is important always to thoroughly clear out the bowels by repeated cathartics for several days prior to the operation. There can be no doubt that purgation after abdominal section is a supplemental and indirect method of drainage.

In conclusion, I desire to make an earnest plea for earlier interference in abdominal diseases. Here in the South this lesson needs to be impressed firmly upon the minds of the profession. When operations are done in good time, before emaciation and exhaustion come on; before repeated attacks of peritonitis have complicated comparatively easy tasks for the surgeon; before the blood is charged with septic products; then will our results excel those of the present time. It is time for the profession generally to recognize these great advances in abdominal and pelvic surgery, and give the patient the benefit of early operation with its increased safety.

SELECTIONS.

HYDROPHOBIA: A SHORT ACCOUNT OF THE DISEASE, AND OF PASTEUR'S SYSTEM OF PROPHYLACTIC TREATMENT.* By A. BARRON, M.B., Lond., Professor of Pathology in University College, Liverpool.

For upwards of 2,000 years the disease known as *rabies* in the dog, and as *hydrophobia* in man, from its generally leading symptom, the fear of water, has been known and studied from time to time, but until the present decade progress has been slight, unsatisfactory and often condradictory.

In the edition of his *Lectures* published in 1857, Sir Thomas Watson gives a very full account of the subject of rabies as it stood in his day. But even then, a little over thirty years ago, it was considered quite possible, and by some probable, that rabies might arise spontaneously in dogs and other animals, and that the disease might be communicated by affected animals licking perfectly sound skin. His description of the symptomatology of the disease, as met with in man, cannot be improved upon to-day, except that he makes no mention of the paralytic form of the disease, then unknown, but now recognized as being by no means rare.

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* The basis of this paper is a short account of the subject given at a meeting of the Medical Institution, in January of this year.

The incubation period, symptoms, and course of rabies vary according to the animal affected, and, as regards the duration of the incubation period, according to the method of inoculation and the source of the poison, it being found that if the disease be carried on by inoculation in series in some animals (monkeys), the incubation period for the poison is greatly lengthened, in others (rabbits) it is shortened.

In the rabbit, when the disease has been communicated, by inoculation into the archnoid space of a few drops of an emulsion of the cord or medulla obtained from a rabbit belonging to the series kept up now for upwards of five years by M. Pasteur, the incubation period is six days. If, on the other hand, the inoculation be made in the same manner, but with a portion of the medulla of a dog, dead of ordinary street madness (*rage des rues*), the incubation period is usually fourteen days, occasionally twelve, and frequently over fourteen. If the inoculation be practised subcutaneously, the incubation period is usually lengthened. In the rabbit, rabies generally assumes the paralytic and not the furious form. The first symptoms are an apparent slight hesitation in the forward movements of the hind legs; then this hesitation becomes more decided, and the hind quarters develop a *list* to one side or the other, due to paresis of the muscles of the back. The paralysis increases, the hind legs become useless, and the body is dragged onwards by the action of the fore legs. After a time paralysis of the fore legs ensues, and, when complete, the rabbit lies helpless on its side, but breathing is not noticeably affected, the eye remains bright and clear, and any food placed within reach of the mouth is at once seized. There is often a tendency to diarrhœa, especially if much green food is given. The pulse-rate rises, and may vary from 109 to 200 per minute. Sensibility is gradually lost, and there is a complete analgesia before the paralysis is complete. The animal may die at any time, from a few hours to four days, after the onset of the symptoms ; there is at no time evidence of any suffering during the course of the malady.

In the dog, on the other hand, although the paralytic form does occur, being popularly known as *dumb* rabies, it is by no means so common as the *furious* form. Quoting now from Pasteur's account. In the furious form, note

(*a*) A change in the usual ways and habits of the animal. He becomes dull and voiceless, crouches down in dark and quiet corners. He tries to sleep but is often disturbed in his sleep, as if by painful dreams and illusions ; he rises and walks about, then lies down. He is in a continuous state of restlessness and agitation. In some cases he is not agitated but sleepy and careless of whatever is going on near him. If disturbed he growls and shows no inclination to stir.

In either case he still obeys the voice of his master and has yet no tendency to bite.

The agitation increases. In his kennel he piles up the straw, lays his chest on it, then rises in anger and scatters the litter about. In apartments he tears and tosses the cushions, carpets, etc. Occasionally there is a manifestation of intense and unwonted attachment to some other animal or to the people of the household; or he is seen constantly licking cold objects. He is haunted by visions and hallucinations; he barks, snaps, and growls at imaginary beings (Youatt). But still he knows and obeys the voice of his master, and has no tendency to bite him. Nevertheless his saliva is already virulent, and his caresses dangerous. The saliva is virulent eight days, and possibly longer, before the disease is plainly evident.

Often, too, even in this early stage, dogs will bite a stick thrust at them. So also will they often bite people when but slightly worried.

(*b*) The mad dog has no horror of, or repulsion for water. On the contrary, at all periods of the malady he drinks eagerly, or tries to drink. When he fails to swallow the water it is only owing to spasmodic contraction of his throat.

The appetite may be at first and for a short time increased; but very soon it diminishes, and is quite lost and replaced by marked disgust for all kinds of ordinary food, and a thorough perversion of the sense of taste. He tears everything that he meets, carpets, trees, grass—and swallows fragments of anything—including his own excreta, urine, earth, bits of straw, chips of wood, anything. As a consequence of this, there is not unfrequently present a certain quantity of blood in the vomited matter, vomiting being a common phenomenon at this stage.

The saliva of the mad dog is not usually overabundant, and may even be quite normal in quantity.

(*c*) The bark of the mad dog is quite characteristic, and is never forgotten when it has been heard once. Bouley says of it: "Instead of bursting out with its usual sonority, and of being made up of a succession of notes, equal in duration and intensity, it is hoarse, veiled, lower in tone, and after a first full-mouthed bark there follows immediately a succession of five, six, or eight howls, coming far back from the throat, and during which the jaws are never completely closed, as they are ordinarily after each bark. It is not unlike the voice of dogs chasing a hare; it is something intermediate between a bark and a howl, made up of the two, with something more added, strange and sinister.

(*d*) The sight of another dog at once and almost invariably puts the mad dog in a fit of passion. This is therefore an easy and valuable test method. The same effect is produced by the sight of a dog on all rabid animals, to whatever species they belong, including the sheep. Man alone perhaps constitutes an exception to the rule.

The mad dog is analgesic, *i. e.*, his general sensibility is blunted to a considerable degree. He now seems to feel only the very intensest pains. He no longer expresses pain by the usual nasal sound, or the sharp cry which is so familiar. He can be beaten, pricked, and even slightly burnt, without stirring and without uttering any sound at all. If severely burnt, he moves to another place, but still remains mute, although the face becomes expressive of pain. This fact explains the cases in which dogs which were, later on, ascertained to be mad, were seen to bite and tear their own limbs and bodies.

There is often present a certain degree of hyperæsthesia at the seat of the bite, if the dog has been bitten by a rabid animal, shown by his constant rubbing, licking or biting of the part, the leg, the ear, on which on examination there is found nothing capable of explaining the facts observed, except perhaps, a small cicatrix. The same phenomenon is often met with in other animals, and in man, shortly before the onset of the disease.

The sexual instincts also are greatly excited and increased.

(*e*) *Confirmed Rabies.*—In a few cases the animal remains tame and unaggressive to the end, but as a rule he is in a state of delirious rage, about the significance of which there can be no mistake.

He bites and tears at everything thrown at him, if he is chained or in a cage. He attacks furiously all animals that come within reach; later on, man also, more rarely his own master. The pupils are dilated, and the whole face bears an expression of terrible fierceness. Whilst biting and tearing he is always *silent*, unlike the non-rabid dog who fights and barks all at once. He always, in preference, attacks animals rather than man. He often leaves home and wanders far away. From a distance he shows nothing peculiar, has his ordinary gait, and his tail, instead of being held between the legs as so often asserted, is kept high and wagging.

Later on, when tired, he walks with a tottering gait, the head low, the tongue hanging out of the mouth covered with blood and dust, and the tail falling helpless. His sight, as well as his other senses, is now dulled, and he is much less dangerous. Still he can bite, however, and is to be dreaded. After wandering about for a few hours, or it may be days, he often comes home again. At last, on the fifth day or thereabout, emaciated and worn out by repeated attacks of frightful fury and the want of food, paralyzed in the hind-quarters, he dies from sheer exhaustion and asphyxia.

Dumb-Madness.—Inoculations of this form of madness often reproduce the disease in its furious form, and *vice versa*, showing that the two are only different manifestations of one and the same malady. The stages *a*, *b*, *c*, are very much the same as in the furious type, perhaps less marked. Then (*d*, *e*) the voice is quite lost, and even in the first stages it is more exclusively a howl, with no admixture of the bark. The mouth is constantly gaping, owing to the paralysis of the lower jaw, the eyes open, without expression, constantly fixed in the same direction. The predominant symptoms are muscular weakness and cerebral depression. The animal is constantly lying down or sleepy, has neither the will nor the power to bite. His saliva is quite as virulent as in the other form.

In the immense majority of cases, hydrophobia in the dog ends fatally. A few exceptional cases are, however, on record, where the disease spontaneously, or under the influence of medical treatment—namely submersion in cold water until asphyxia is nearly complete, bleeding, enemata—gradually disappeared, and a cure was effected.

In man *hydrophobia* assumes the same two forms as in the dog, viz., the delirous and the paralytic, the former being by far the commoner of the two.

The delirous form can be subdivided into three stages:—

(*a*) *Melancholia.*—Towards the end of the period of incubation, the patient, whether he is aware of the impending danger or not, child or adult, becomes sad, taciturn, shuns all society. He suffers constantly from the intensest headache, and at night his sleep is disturbed by terrible dreams of very varied character. There are occasionally some itching or even painful sensations at the seat of the bite. This period is not always present, and seldom lasts more than four or five days. There is now also, in some cases, an irresistible impulse to walk or to run. In such exceptional cases of muscular excitement there is also found occasionally a state of mental irritability instead of the usual melancholy.

(*b*) *Excitement.—Hydrophobia proper.*—The breathing becomes difficult, labored. Inspiration is cut up by frequent sighs. Gradually all the muscles receiving their nervous supply from the medulla oblongata (the part of the nervous axis wherein the brain and spinal cord become connected) become implicated, and there are produced the peculiar spasmodic contractions of the pharynx and larynx. General hyperæsthesia (or increased activity) of all the senses, horror of water and of all bright objects, of the lightest draft of air, of the slightest sound or smell. Convulsive fits. On the second or third day there supervenes the frequent symptom of "sputation,"—the mouth, at first dry, now becomes moist and watery, filled with frothy mucus. There are frequent hallucinations of sight, of hearing. The voice is hoarse, convulsive, spasmodic, and may simulate the bark or howl of a dog. During the convulsive attacks the patient often hurts and bruises himself, and has still the tendency to run away from home. These attacks may alternate with fits of melancholia and manifestations of great despondency. The temperature rises, as in tetanus, and may still increase for one hour after death (Peter); up to 43° C. (Joffroy).

(*c*) *Paralysis* of all the senses and finally of the intellect also, and death from exhaustion and paralysis of the respiratory and circulatory centres.

Hydrophobia in man can be confounded with hysteria, tetanus, epilepsy, delirium tremens, and certain forms of acute mania. It has sometimes been identified with uræmia or blood poisoning from kidney disease. It will be enough, in order to avoid confusion with the last named affection, to remember that in hydrophobia the temperature rises as death approaches; in uræmia it always goes down below the normal. The type of the convulsions, the mental disorder, and the abnormalities of general and special sensibility, are very different in the two.

The paralytic form of rabies in man is much less common than the one just described. Nevertheless, in the second number of the *Annales de l'Institut Pasteur*, Dr. Gamaleia of Odessa, from whom is borrowed this description, publishes an account of about thirty such cases. He finds that they are generally the result of deep and multiple bites:—

"Onset by a strong fever, general malaise and aching, headache and vomiting, as in all acute infectious diseases. Such an onset is very frequent also in cases of ordinary rabies. In all the patients whose temperatures were taken, there was found, at a certain period of the malady, a high degree of fever.

"Then comes a train of localized pains, generally in the limbs bitten, and girdle pains at different heights of the vertebral column. These localized premonitory pains are rare in the lower limbs (Brouardel).

"Next supervene a degree of numbness of the senses, fibrillar contractions, ataxy, paresis, and then paralysis more or less complete of the muscles first implicated. General sensibility remains intact, or, if it disappear, it does so very much later.

"Then the paralysis spreads, preceded or accompanied by sharp pain in the muscles invaded; the remaining limbs, the trunk, the rectum, and bladder, the face, the tongue, the eyes, are all paralysed. So also, sooner or later, and more or less completely, the respiratory centre, the implication of which brings about a marked change in the respiratory phase of the patient's malady, and, as a corollary, some difficulty in swallowing liquids (the so-called *great symptom* of *hydrophobia*, or horror of water, being a result much more of the imagination of the patient and of the medical man, than of the rabies virus).

"When well marked, this respiratory lesion is the cause of dyspnæic convulsions in the muscles which are not yet paralyzed. Then, frequently return of the breathing to the normal, but spread of the paralysis to the heart and death by syncope."

This form of rabies has a duration of seven days and a half on an average.

The same author concludes that the virus, from the study of the symptoms detailed, can only spread by the nerves, from the periphery or external surfaces to the centre. He also insists on the necessity of giving up the old notion of incurability of rabies when once developed, although he does not himself quote any authentic case of recovery, his main argument being based on the fact that rabies is not so common or so severe in its symptoms in man as in the dog, and yet there are on record cases of undoubted recovery in the latter animal. The medical man "ought to cease aiding on the virus by morphia; he ought, on the contrary, to help the nervous system in its struggle against the all-invading virus, to assist the organism in bearing up against the momentary arrest of the vital functions (*e. g.*) by artificial respiration)." In that train of reasoning hypodermic injections of strychnine might at any rate be tried.

In the dog the *post-mortem* reveals "a dark blue and almost black color of the tongue and of the whole mucous membrane of the mouth. In the stomach some discoloration of the lining membrane, presence often of a black liquid like coffee dregs; presence also of a collection of heterogeneous materials not usually swallowed by healthy dogs—hair, straw, wood, coal, ashes, bits of carpet, earth, etc. Blaine, Youatt, and others note this last sign in almost every case, Bruck Müller, of Vienna, only in 54 per cent. of his observations. Congestion of the lungs and of the central nervous system, small meningeal hæmorrhages, minute hæmorrhages into the gray and white matter of the cord, medulla, and brain, with small grayish areas of softening are common.

In man *post mortem* examination shows that the lesions of chief interest lie in the central nervous system. The nerve-cells are cloudy and granular; general congestion of the nerve-centres, the blood-vessels being dilated and ruptured here and there giving rise to hæmorrhages; miliary abscesses or collections of leucocytes throughout the substance of the medulla oblongata, more sparsely in that of the brain and cord; foci of finely granular matter infiltrating the normal nervous element, the perivascular lymph spaces, and the walls of the blood-vessels, which are compressed and assume a moniliform or beaded aspect; hyaline thrombi or blood-clots form in their interior at the level of those compressed points, the whole giving the appearance of a nodule or small tubercle, in the anterior of which Klebs thought he had discovered the specific micrococcus.

Ross, of Manchester, finds that the lesions are most marked around the central canal, but the anterior and posterior horns and the gray matter throughout is largely implicated also, mainly so perhaps. The same author draws attention to this interesting fact, that in tetanus and rabies the lesions are very similar, but that in the former case they are chiefly spinal, in the latter cerebral, in their main localizations (?). The ganglia of the sympathetic system and the nerve roots show the same lesions as the brain and cord. The nerves, and in particular those of the part bitten, those rising from the medulla, the vagi, the glosso-pharyngeal, the hypoglossal, the spinal accessory, the phrenic, have been found red and hyperæmic, swollen, and the seat of minute foci of hæmorrhage; the myelin is diffluent, fragmented, and in many nerve fibres the axis cylinder has altogether disappeared (Wagner, Krukenberg, Cheadle).

The lungs are red and congested, here and there the seat of small hæmorrhages, filled with frothy mucus formed at the time of death, for there were no auscultation signs of its presence during life. Very generally also some interstitial and subpleural emphysema. Those pulmonary lesions, just like the liquid venous-black state of the blood, seem to be the result of the terminal asphyxia (Brouardel). In addition, the stomach is often congested, with numerous submucous hæmorrhages and hæmorrhagic erosions; it usually contains blood-stained mucus.

Note also, in some cases, hæmorrhages in the muscular tissue of the heart, parenchymatous nephritis, congestion and swelling of the lymphatic glands, with the terminal leucocythæmia; softness of the spleen and liver, the latter being in a state of fatty degeneration—all those forcibly remind one of the lesions found in the other well-known infectious diseases—variola, scarlatina, septicæmia.

Rabies in the dog has a variable incubation period; in 80 per cent. of the cases it is under two months, and it is seldom longer than six months.

In man the incubation period, according to some trustworthy statistics collected by Professor Brouardel, out of 367 cases, 220 occurred within the first three months, and from a study of the whole of these cases he concludes that "rabies supervenes oftenest in the course of the second month after infection, rarely after the third month, quite exceptionally after the sixth month." The more numerous and severe the bites the earlier do the symptoms appear.

There can be no doubt, from the study of many statistics, that not less that 15 per cent. of men bitten by mad dogs die of hydrophobia. The percentage for bites on the hands and face, and for bites in children, is very much higher, and where mad wolves are the assailants the percentage is probably over 80.

A short account of M. Pasteur's labors, as shown by his various communications from time to time to the Académie des Sciences, may not be out of place here:

1. January 24, 1884.—*On a New Malady* (*Septicæmia*) *produced by the Saliva of a Child who died of Rabies.*—This is of no interest in the hydrophobia question.

2. May 30, 1881.—This communication recorded the discovery of the presence of virus in the central nervous system in rabies, and that the incubation period of the disease could be greatly shortened by inoculation, after trephining, directly on the surface of the brain.

3. December 11, 1882.—A paper giving an account of inoculation by intravenous injection of cord emulsion, drawing attention to the purity of the virus obtained from the central nervous system in contrast to the impurity of the virus in saliva, and recording the fact that after some of his experiments dogs were found to have become refractory to rabies.

4. February 25, 1884.—Records his failure in finding any organism obtaining any cultivations of the virus of rabies except by passing it from animal to animal. He also records the fact that when the disease is transmitted in series through animals of the same race, it gradually settles down to a fixed incubation period for animals of that species.

5. May 19, 1884.—Deals with the *Attenuation of Rabies* by passing through monkeys, in which the disease acquires a long incubation period, and then inoculating animals with virus of this the longest incubation period, and subsequently with virus of a shorter incubation period. In this way, instead of producing the disease, a refractory condition arises.

6. October 26, 1885.—*A Method for the Prevention of Rabies after the Bite of a Rabid Animal.*—In this communication, after certain preliminary remarks, M. Pasteur goes on to say:

"After, I might say, innumerable experiments, I have at last found a method of prophylaxis both practical and rapid, and one which has proved successful in the dog with so much constancy in such a considerable number of cases already, that I feel confident of its general applicability to all animals, and to man himself.

"This new method rests essentially on the following facts: The rabbit, inoculated under the dura mater, after trephining, with the spinal marrow of an ordinary mad dog, is always affected with rabies. It takes the disease after a length of incubation averaging about fifteen days.

"If a second rabbit be inoculated from that first one, a third from the second, and so on, always by the same mode of inoculation, there is soon manifested in the succeeding rabbits a growing tendency towards a shorter incubation.

"After a number of passages through rabbits, varying from the twentieth to the twenty-fifth, the incubation falls down to eight days, which remains the normal incubation time for the next twenty or twenty-five passages. Then it reached an incubation of seven days only, and recurring with striking regularity up to at least the ninetieth passage, which is the point we have reached at present, and there is barely, as yet, a slight tendency towards a shorter period of incubation than seven days.

"The series was begun in November, 1882, and has now lasted three years already. It has never once been interrupted, and never has it been necessary to have recourse to any other than the virus of rabbits of the same series which had previously died of rabies. Nothing is easier, therefore, than to have constantly at one's disposal, for considerable lengths of time, a virus of perfect purity, and always identical with itself or as nearly so as possible. Therein lies practically the whole secret of the method.

"The spinal marrows of the rabbits are virulent throughout the whole of their substance, with constancy of the virulence. If from those marrows we take portions a few centimetres long, using all possible precautions to keep them pure, and then suspend them in a dry atmosphere, their virulence diminishes slowly until at last it is all lost. The time that the virulence takes to disappear entirely varies somewhat with the thickness of the marrows, but most of all with the outside temperature. The lower the temperature, the longer is the virulence preserved. These points constitute the scientific part of the method.*

"After those preliminary explanations, here is the process for rendering dogs refractory to rabies in a relatively short time.

"In a series of flasks, the air inside of which is kept dry by dropping pieces of caustic potash into it, suspend every day a portion of fresh spinal marrow taken from a rabbit which has died of rabies of seven days' incubation. Every day also inject under the skin of the dog to be made refractory a full Pravaz hypodermic syringe of sterilised broth, in which has previously been triturated a small piece of one of the drying marrows. Begin with a marrow old enough to make sure that it is not at all virulent. Previous experimentation will already have settled that point. On the succeeding days proceed in the same manner with fresher marrows, and use those of every second day, until finally we inoculate a last and very virulent one which has been drying only one or two days.

"The dog has now become refractory to rabies, and will not take it however inoculated, under the skin or on the surface of the brain.

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* If the rabid marrow be put whilst still moist in an atmosphere of carbonic acid, its virulence can be preserved intact at least for several months, provided we keep it free from admixture with atmospheric or other germs.

" Making use of this method, I had already rendered fifty dogs of all ages and of all races refractory to rabies, without having met with a single failure, when, unawares, on Monday, July 6th last, three persons coming from Alsace presented themselves at my laboratory; they were—

" Theodore Vone, a grocer from Meissengott, near Schelstadt, bitten on the arm, on July 4th, by his own dog, which had become mad.

" Joseph Meister, 9 years old, bitten also on July 4th, at eight o'clock in the morning, and by the same dog. This child had been thrown down by the dog, and had received numerous bites on the hand, the legs, and thigh, some of them so deep that he could scarcely walk. The principal wounds had been cauterised with carbolic acid by Dr. Weber, of Villé, on July 4th, at eight o'clock in the evening, twelve hours only after the accident.

" The third person was the mother of little Joseph Meister, and had not been bitten.

" The dog had been killed by his own master, and on opening his stomach it had been found stuffed with hay, straw, and chips of wood. The animal was certainly mad. Joseph Meister had been rescued from him all covered with saliva and blood. Mr. Vone had been severely contused on the arms, but he assured me that his shirt had not been traversed by the fangs of the dog. I told him there was nothing to fear, and that he could go home that same day, which he did. But I kept with me little Meister and his mother.

" The weekly meeting of the Académie des Sciences was held on that same day, July 6th. I saw there our colleague, Dr. Vulpian, to whom I related what had occurred. Dr. Vulpian, joined by Dr. Grancher, professor at the School of Medicine, kindly consented to come at once and see the state and the number of the wounds of little Joseph Meister. He had been bitten in fourteen different places.

" The advice of our learned colleague and of Dr. Grancher was, that owing to the depth and number of his wounds, Joseph Meister was exposed to almost certain death from hydrophobia. I then communicated to Drs. Vulpian and Grancher the new results I had obtained in my studies of rabies since the time of my lecture in Copenhagen a year before.

" The child, being apparently doomed to inevitable death, I resolved, not without feelings of utmost anxiety, as may well be imagined, to apply to him the method of prophylaxis which had never failed me in dogs."

On July 6th the treatment of Joseph Meister was commenced by the inoculation of marrow fifteen days' old, and completed on July 16th with marrow one day old. Joseph Meister was alive and well more than three years after.

After this the Pasteurian treatment for rabies rapidly increased in interest and importance, and people from all parts of the world went to Paris for inoculation. The temporary premises in use at this time became insufficient to meet the requirements of the treatment, and, with the assistance of the French Government aided by private subscriptions from all parts of the globe, the present Institut Pasteur, in the Rue Dutot, was built and opened on November 14, 1888.

It will be interesting now to give an account of the daily work of the Institute.

"The patients assemble in their general waiting-room every morning at ten o'clock—one hour before the time for the inoculation to begin. The secretary or his assistant then inscribes the names of all new-comers in a large register kept for the purpose, two pages for each person. The bites are examined, and if the skin is found to be unbroken, simply contused through the garments, or occasionally even less than that, the applicant is told to go home and keep his mind quiet. He is in no danger. The patients who have been actually bitten are kept for treatment.

"We shall now give the scheme according to which the patients are examined and inscribed.

"When the examination and inscription of new patients is over, they go back into the waiting-room, and the secretary or Dr. Charrin draws up a nominative list from his books of all the patients to be treated at the particular sitting, arranging them in groups according as they are to receive their first, second, third, or last inoculation. He also draws up the other list, which we have already noticed in the inoculation-room. The treatment can now begin. He stands in the office, near the door opening into the inoculation-room, and calls into the office all the new patients. Then he calls out loudly the date of the marrow to be used and nominately, those first patients one by one. They in succession walk into the treatment-room, bare their hypochrondiac region, and receive from Dr. Roux a hypodermic injection —a full syringe for adult men, one-half or more for adult women, and only one-third of the syringe for children. The syringe is filled by M. Viala by thrusting its needle through the paper cover of the glass prepared from the fourteen days' old marrow. The needle is then dipped into the hot oil and handed to the inoculator, who immediately after the operation returns it, to be filled and oiled anew. The inoculations are thus rendered as painless and as aseptic as it is practically possible to make them. The patients are now told when they are to come back, and walk away home, or else pass into the surgery to have their wounds dressed if they require it.

"When this first group is done the secretary calls out the date of the next younger marrow. On hearing this, M. Viala, who is also all the time keeping his eye on his own list and controlling the numbers, puts by the first glass and brings out the one prepared from the marrow fourteen days' old, and proceeds as before. Meanwhile the secretary has called the second group—those going to receive their second or third inoculation, as the case may be—into the office, and thence one by one they pass into the treatment-room. And so on for the different groups in order, up to the last, those inoculated from the five-day-old marrow.

"The surplus of the different viruses is emptied into some safe place, the glasses carefully sterilised, the syringes unscrewed and broken up and treated in the way previously mentioned—and the morning sitting is over.

"The order adopted for the inoculations is the safest for the patients themselves, and, further, permits of the use of a single syringe for them all. The injections are made first with the weakest virus and then progress upwards, ending with the strongest. Supposing some particles of a previous virus to have remained adherent to the needle, the next patient runs no danger from them; he has already received a full inoculation from that virus at the previous sitting, and is now actually receiving a stronger virus. Had the reverse order been adopted, and supposing the same accident to occur, the patient would be receiving into his system portions of a stronger virus than he was ready to receive, and might thus be exposed to some risk. To guard against that possible danger it would then become necessary to use a new syringe for every group.

"It would be difficult to see anywhere else, and within such a small space, a more curious or motley assemblage of people. They at the present time number close upon one hundred every morning, occasionally more. During the first months, and before the establishment of the branch stations in Italy, Austria, Russia, and elsewhere, they often came up to two hundred, and the variety of people was even greater than it is now. The Russian soldiers and peasants and their solemn popes, the gaudily dressed Italians, were then conspicuous. But we still have lords and ladies from every latitude; peasants from all corners of France in their frequently picturesque attire; Spaniards and Bretons, with their broad-rimmed hats and tight-fitting dress, reminding one of the Eton boys of England; soldiers and sailors; Turks, Arabs, and negroes from Algeria and elsewhere, the latter wrapped up in their flowing white burnous; and in the midst of them all, an abundant sprinkling of anxious but not dumb children. These often scream fearfully when their turn comes, but it is much more from fright than from pain. A copper or a biscuit in time saves many a scream. Nervous ladies may receive their inoculations in a small side-room. Now and then a patient faints away, but the accident is trifling, and never lasts more than a few minutes. They often inquire as to the régime to be followed during treatment or after it. There is none really, although for obvious reasons it is not unusual to hear the recommendation made, 'Be sober in all things—no alcoholic excesses.' As a matter of fact, it is found that, of those patients who succumb from rabies after the inoculative treatment, a large proportion belong to the class of alcoholic or neuropathic people, the hysterical and the epileptic. Those circumstances do not make the treatment counter-indicated, but ought to render the prognosis more guarded (Grancher)."

Up to the present, May, 1889, over seven thousand persons have been treated by Pasteur's method, and on the whole number the percentage of deaths from rabies is under 1 per cent. This is a very great advance on the 15 per cent. of former statistics, and, besides, includes a number of individuals not treated until so long after infection that no reasonable hope could be entertained that the treatment would prove effective.

A recent and interesting case with which I was connected may be mentioned. On January 23, of this year, in St Helens, a dog bit in the space of half an hour or so, nine children and one man. The dog was subsequently killed; and as from the *post-mortem* appearances as detailed to me by Dr. H. Knowles, of St Helens, and the appearance of the cord, I had no doubt but that the dog was mad, I recommended that all the children should be sent to Pasteur for treatment. This was accordingly done. Three rabbits inoculated with portions of the dog's cord by Professor Horsley, of the Brown Institution, all developed symptoms of rabies on the twelfth day, and died on the fifteenth or sixteenth day, the disease running a typical course. This dog, then, was unquestionably rabid. To-day, five months after infection, all the St Helens cases are in good health. Mrs. Atkinson, the Edge Lane heroine is now the only one alive who is known to have been bitten by the Edge Lane dog; the two others both died from hydrophobia. She alone underwent Pasteurian treatment.

At the present moment a movement is on foot, started by the Lord Mayor, to establish a Pasteur Institute in London. England is almost the only civilized country in the world in which there is no antirabic institute. If no institute is established in London, it is to be hoped that the government may at least see their way to subsidizing the Paris Institute, seeing that we send nearly fifty persons annually from this country for treatment.

Note.—For much of this paper I am indebted to *Hydrophobia, an Account of M. Pasteur's System*, by Renaud Suzor; Chatto & Windus, and to the *Annales de l'Institut Pasteur*, a monthly periodical which contains valuable papers on all bacteriological subjects.

PRACTICAL POINTS IN THE DIAGNOSIS AND TREATMENT OF MALARIA IN CHILDREN. By Hiram N. Vineberg, M. D., New York.

The vague expression, "a touch of malaria," is heard as often in the diagnosis of the diseases of children as it is in that of the diseases of adults. This diagnosis, which is at once popular and covers a multitude of physical sins in the lay mind, is resorted to by the physician, not so much from a desire to seek shelter under a mantle of ignorance, as it is because he is too lazy or too busy to examine the child thoroughly. In the present state of medical knowledge, in spite of recent strides, protection under a mantle of ignorance is not only excusable, but at times unavoidable. We use the term "neurasthenia," and are glad to have it for a set or group of symptoms of the pathology or nature of which we are in utter ignorance; but with malaria, however, the case is entirely different. Here we have a distinct poison, definite pathological processes, and a set of symptoms which, although they may be variable, are, on the whole, tolerably uniform.

In my opinion, the vagueness in the diagnosis of malaria in early life has been, in a measure, propagated by the system of elevating a single symptom into pathognomonic value. One would diagnosticate the affection from a peculiar state of the tongue; another, from the color of the skin; and a third, from some peculiarity of an abdominal pain. It would, in my mind, be just as scientific to make the diagnosis of pneumonia from some peculiarity in the cough, without a thorough physical examination of the chest, as it would be to make the diagnosis of malaria without noting the condition of the spleen, because the patient presented a dark-brown tint of the skin, or had headache, or because the tongue was coated with a brownish-yellow fur. One often hears it said, "Well, what does it matter about a correct diagnosis of malaria? If you suspect it, you give quinine and settle the point." But it *does* matter to the patient's welfare, and it *ought* to matter to the physician's self-respect, whether he treats disease with the best knowledge that is within him or at random by firing "shot doses" of medicine at it. Then, a few doses of quinine does not always cure malaria, while it may cure an entirely different affection. But of the value of quinine as a therapeutic test, later on.

It is my intention, therefore, in this article, to bring under review the most prominent and reliable symptoms of malarial poisoning as observed in early life, discuss each symptom separately, and thereby endeavor to estimate its value in forming a diagnosis of that affection. Afterwards the different diseases which may be mistaken for malaria will be discussed and an effort made to indicate their points of differentiation.

I have nothing particularly new or startling to offer. My object is merely to emphasize a few well-established facts that seem in danger of being consigned to oblivion, and to present some practical points that I have had to learn for myself, and the mention of which I only found, afterwards, scattered through a literature which, although not extensive, is not easily accessible. My remarks are based upon a careful study of eighty cases of malaria, in early life, that came under my observation in dispensary and private practice during the past eighteen months, and on a close perusal of the literature to which I have referred.

The prominent symptoms and signs of acute malaria are chills, convulsions, fever, sweating, enlargement of the spleen, hæmatozoa in the blood.

Chills.—In children the chills, as a rule, do not set in so abruptly as in the adult. There is usually a prodromal stage of a few days' duration characterized by malaise, a tired feeling, and lack of energy. The child does not play and run about as usual, and suffers from loss of appetite. In very early life—that is, under two years—chills are said never to occur, but I have observed distinct chills in one patient nineteen months old, and in another two years old. Instead of a chill, the mother, if observant, will usually notice that of a sudden the child grows drowsy, frequently yawns, and stretches itself several times. The lips and finger-nails become blue, while the little hands feel cold to the touch. Frequently twitching of the eyelids will be observed, and this phenomenon may be a forerunner of a convulsive seizure. In older children chills occur as in the adult, although they are seldom so pronounced or of such long duration. Sometimes they are entirely absent. Some of my patients complained merely of a chilly sensation running down the spine; others, again, had never even complained of feeling cold. The period of the day at which the chills occur varies considerably. In my cases the chills—in fully half the number—took place towards evening, between 2 and 8 o'clock, P.M.; of Holt's (one hundred and six cases), in thirty-five the chills occurred in the forenoon, and seventy-one in the evening; Bohn's statistics correspond to the foregoing. The chills in early life are irregular in their recurrence. The mother will often tell you that they began at first late in the afternoon, but that each subsequent attack occurred earlier, so that the latter ones have taken place in the morning, or the reverse may have been the case; they began in the forenoon and ended by recurring in the afternoon or evening. The most common type in children, according to some observers, is the quotidian. Of Bohn's four hundred and sixty-five cases, two hundred and forty-five were of this type.

Next in frequency is the tertian form, which comprises two-thirds of my cases. The difference in statistics by different authors depends upon the severity of the epidemic; the more severe exhibiting the quotidian, the less severe the tertian form. Other forms are rare.

Recurring chills are common to other diseases than malaria. They are witnessed in hectic fever, in ulcero-endocarditis, in pyæmia, and whenever suppuration is taking place in deep-seated parts. Hectic fever, is most likely to be the attendant of some chronic process, such as phthisis of the lungs, which is not an uncommon disease in childhood. When we recall the fact that malarial chills may frequently occur in the evening, the period at which the chills of hectic fever usually recur, it may be readily conceived that an error could easily be committed, if too much dependence were placed upon this symptom alone. The chills attending pyæmia and suppuration of the deeper parts seldom exhibit the same periodicity as those of malaria, nor the same freedom from febrile disturbance in the intervals. Further, the chills of pyæmia are often characterized by the profuse sweating which immediately follows them rather than by an active development of the fever. In the early stages of pyæmia, however, it will not always be easy to tell whether the chills are of pyæmic or malarial origin, particularly if the patient has not recently undergone an operation or the source of the pus is not evident. I retain a vivid recollection of a case that I saw in the Montreal General Hospital during my student career. A boy, æt. five years, was taken ill with recurring rigors, folowed by fever and sweating. At first a diagnosis of malaria was made; but later on, as metastatic abscesses were observed in various parts of the body, the diagnosis was changed to pyæmia; but no suppurating lesion, as the source of the disease, could be detected. The hope of finding this, even at the autopsy, was almost given up when that most careful and acute observer, Dr. William Osler, then of Montreal, began dissecting out every bone of the body, and finally found found a small periosteal abscess of the tibia near the malleolus, which had not given rise to pain, and was overlooked during life. Ulcero-endocarditis is fortunately a rare disease. It forms one of those hidden rocks in medicine which the most skilled and experienced pilot in diagnosis is likely to run against. It is seldom a primary disease in childhood, but is usually secondary to rheumatism, suppurative disease of the bones or joints, diphtheria, and the infectious diseases. A physical examination of the heart will frequently, but not always, detect an endocardial murmur.

Even in sub-acute gastritis I have more than once observed the recurrence of chills, exhibiting apparently a periodic type.

The following case in private practice offers a pregnant example: X., æt. fourteen years, of a mobile, nervous temperament, was taken ill on June 6 with a chill, malaise, fever, and pain in various parts of the body, but most pronounced across the front of the chest. The tongue was coated and the bowels were loose. The rectal temperature registered 104° and the pulse was 120. A careful examination of the chest detected nothing abnormal. There was no enlargement of of the spleen. On the following day he was quite free from fever and felt well, excepting that his appetite was poor and he was rather weak. On June 8—that is, two days later—he had another marked chill, and when I saw him, an hour afterwards, the rectal temperature was 103°; the pulse 96. I again made a careful examination, but with negative results, save that pressure over the epigastrium elicted pain. *The spleen was decidedly not enlarged.* I ordered the continuance of the light diet which had been neglected as soon as he felt better, and I purposely refrained from giving any medicines. On the day following the temperature was 100°, and in a couple of days the patient was restored to his usual health. He has been under my constant observation ever since then, and he has remained perfectly well.

There has been no recurrence of the chills nor any symptom pointing to paludism. Comment is unnecessary.

There is an affection not observed, however, as far as I know, in early life that presents all the characters of intermittent fever, and is not due to malarial poisoning. I mention it here for two reasons: first, to show how conditions other than paludism may produce a train of symptoms which cannot be distinguished from those produced by the malarial poison; and second, because I have good reasons for believing that the affection is not generally known. I have reference to the "fiévre intermittente hèpatique," first described by Charcot,* and admitted by all the leading authorities on diseases of the liver. Two forms are described: one occurring in patients with latent malaria, and the entrance of a gall-stone in the common bile-duct calls forth chills; and the other occuring in patients entirely free from any malarial taint.

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* "Lecons sur les Maladies du Foie et des Reins." Paris 1877.

Convulsions.—In children it is not uncommon to have a malarial chill replaced by a convulsion, which may be repeated as many as three, four, six, and even eight times within a few hours. In one of my patients, a little boy nineteen months old, who had distinct chills, these were replaced, on one occasion, by eight convulsions in the course of a couple of hours. At one time the patient may have a chill or that which has already been described as taking the place of it; at another time it may have a distinct convulsion; or again, it may have a chill which in a short time passes into a general convulsive seizure. Still further, there may not be any chills at all, but only attacks of convulsions. It would extend this paper to an undue length if I were to discuss the various affections in childhood that may be attended with convulsions. But there is one disease in particular which renders its subjects extremely prone to this disturbance of the nervous system—I mean rickets.

The close association between rickets and convulsions is generally well known; but that which is not so well known is that the milder forms are just as likely as the severer forms to render the little patient subject to eclampsia. What I understand by the milder form is when the disease manifests itself only by delayed or premature dentition, by some sweating about the head, a tendeny to kick off the bed-covering, and prominence of the superficial veins of the forehead and temples. In addition to the foregoing, there may be constipation or diarrhœa alternating with constipation. The case that I presented at the New York Academy of Medicine, March 14, 1889,* may have been said to have belonged to this class, for the nervous disturbances were severe in the extreme.

The baby had suffered for six weeks with attacks of laryngismus stridulus and severe eclamptic attacks. For days the convulsions recurred as often as six times a day, some of which were extremely protracted, one lasting over two hours. But the child made a complete recovery by the treatment being directed to the rickets. In addition, bromide of potassium was given. Quinine or arsenic was not administered. What make these cases so difficult to differentiate from malaria is the circumstance that the spleen may be considerably swollen, as it was in the case just referred to.

The febrile stage.—The fever is the most constant and prominent act in the three-act drama of acute malaria. Liebermeister † says, "The febrile access is distinguished from the fever attending most other diseases by its violence, on the one hand, and its rapid evolution on the other." The fever attains its maximum rapidly, at which point it remains for some hours, but the descent of the temperature-curve is gradual. I have seen it reach as high as 105° and 106° in cases that were of a benign type. In fact, none of the cases that form the basis of this paper could be considered as belonging to the severe or pernicious form. Such sudden high elevation of temperature may be met with at the onset of a simple attack of indigestion or of pneumonia and sometimes of scarlatina. Dr. Cheadle has reported a couple of cases—in which the febrile stage was attended with a rash not unlike that of scarlatina. But in making a differential diagnosis in such cases it must be remembered that the scarlatinal rash does not appear until twenty-four hours have elasped after the onset of the fever. The fauces in these cases may be red, but the redness has not that peculiar punctiform appearance which is so common in scarlatina; and, moreover, the redness in the fauces is less generally diffused. Then again, the fever of malaria is followed by a period of apyrexia more or less complete.

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* *New York Medical Journal*, June 8, 1889.

† Leibermeister, "Infectious Diseases." Part I. Translated by Dr. Hurd Davis, 1888.

In central pneumonia, where the physical signs do not develop for two or three days, we exclude malaria by the absence of intermittence in the fever. But as the spleen may be considerably swollen in this disease, as will be shown later on, we have often to wait a few days before we are enabled to make our diagnosis.

Sweating stage.— The sweating stage in children is usually imperfect both as to degree and duration. It may be so slight as to pass unnoticed by the child as well as by the mother. At times, however, it may be quite profuse. Occasionally the mother will say that the child gets feverish sweats, then "dries up into fever," and again sweats. It may go through two or three such phases during a single paroxysm.

Swelling of the spleen.—The spleen enlarges more rapidly and to a greater degree than in adults, owing to the elasticity of its capsule in early life. Its enlargement is more important as a diagnostic element on account of the uncertainty and imperfection of the cold and sweating stages. Moreover, it may be accidental only, if the physician gets an opportunity to substaniate with the thermometer the mother's statement that the child has attacks of fever. It is also more important from the circumstance that in early life, no matter how small the dose of poison, it is always sufficient to produce marked congestion and consequent enlargement of the spleen. It is true that at first the organ decreases in volume when the paroxysm is over almost as rapidly as it increases, but after the second or third paroxysm it remains permanently swollen. Hence it may be that, if the child is examined in the intervals of the first two or three paroxysms, no increase of size will be noticed. It is then only in such exigencies as these that a diagnosis of malaria in childhood is justifiable in absence of splenic enlargement. The expression of this seemingly well-known fact might appear superfluous were it not that there is a tendency of late, in high quarters, to cast this sign into the background (Holt, Forchheimer). But the enlarged organ has to be sought for by percussion, and not by palpation, as in adult life, for it may reach considerable dimensions without its projecting beyond the margin of the ribs. The splenic tumor pushes its way upward and backward, because it is usually prevented from descending towards the pelvic cavity by the costo-colic ligament, which in early life is very rigid.* I have time and again found the splenic dullness measure, vertically, four inches and more, and yet its lower margin did not reach beyond the eleventh rib. Even when the swollen spleen descends below the margin of the ribs it cannot always be felt as in the adult, owing to the soft consistency of the organ, which has aptly been compared to a sponge, the interstices of which are filled with blood.

To map out an enlarged spleen in a child requires some patience and a considerable degree of practice. I make this statement advisedly, for I have frequently seen skillful physicians accustomed to the examining of children make the greatest blunders when they came to examine the spleen. This fact must be my excuse for treating at some length this apparently simple matter. The child, perfectly nude or dressed only in its chemise, should be placed on its mother's lap, or, what is better still, on a table or hard level surface, on which a blanket is laid. It should be placed almost on its right side,—that is, in a position midway between the supine and side, with its left arm—held by the mother or an assistant—over its head. It should be seen to that the child does not arch its back, for in that position the spleen is displaced from the side of the chest. The percussion should be begun high up near the axilla and continued downward in a space bounded by the two axillary lines. As soon as a point is reached at which the note becomes dull, or a greater resistance is offered to the finger a mark should be made with a pencil. This may be taken as the upper border of the spleen. The percussion should be continued lightly until the tympanitic note of the intestines is elicited. In percussing it is very important that not too much force be used in striking the interposing finger, for if this be done the tympanitic note of the stomach and intestines will be brought out through the overlying spleen. The careful physician need not be told that when abnormal dullness in the region just outlined is obtained, the posterior aspect of the chest should always be examined for pulmonary consolidation, or for what is more likely to give a dull note in that area—pleuritic effusion. I recall an instance when, in the hurry of dispensary practice, after placing the child in the above position, and obtaining a dull note from the fifth rib downward, the diagnosis of an enlarged spleen was about to be made. The diagnosis of malaria would certainly have been entered on the books, for the symptoms pointed to this affection, did not the axiom which one soon learns for himself in treating children,—"always examine the chest, no matter what the symptoms may be"—prick my conscience and urge me to follow my usual routine of examining the chest. I found that the dull note, which I took to be the evidence of an enlarged spleen, was caused by a fairly copious purulent effusion into the pleural sac.

There is another error which one may readily fall into, if he does not bear in mind the fact that the lower border of the spleen is in close contact with the left flexure of the colon (Luschka). Hence an accumulation of fæces would give an increase of dullness in the splenic area. I always suspect this when the apparently enlarged spleen does not reach above the upper border of the ninth rib.

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* Dr. George McClellan, Keating's "Cyclopædia of the Diseases of Children," vol. i, p. 37.

But, unfortunately, enlargement of the spleen is not a pathognomonic sign of malaria. It fell to the lot of that able and acute clinician, Friedreich,* to point out that all acute infectious diseases are attended with marked swelling of the spleen. But of these only two—typhoid fever and acute infectious pneumonia—from this circumstance, are likely to cause the diagnostician any difficulty. According to this observer, even the milder forms of typhoid are attended with marked enlargement of the spleen—an observation which I can fully corroborate in the typhoid of the young. The splenic tumor, therefore, bears no ratio to the severity of the disease. On the contrary, it may reach larger dimensions in the mild than in the graver variety. The enlargement takes place early in the disease. It may already be considerable on the second or third day. Indeed Friedreich† mentions a case in which he noted a large splenic tumor in the initial stage before the thermometer registered any elevation of temperature. The tumor persists after the subsidence of the fever, and it is only after convalescence has been fully established that the the organ regains its natural size.

The acute infectious pneumonia of this author is distinguished from the ordinary croupous variety by the local process, which at first may be confined to a small portion of the lung, spreading gradually from day to day, until the whole lung is affected. The fever continues for ten, twelve and fourteen days. The termination is not by crisis but by lysis, which may spread over several days. Already during the first few days the spleen is markedly swollen, but the splenic tumor differs from that of typhoid by its rapid disappearance on the cessation of the fever.

Before leaving this subject, let me draw your attention to a recent paper by Dr. Fichtner,‡ in which he describes six cases of sudden onset of fever of three, four, and five days' duration that were attended at the outset with marked enlargement of the spleen. One of the cases occured in a child three years old. An exclusion was made of typhoid fever, but nothing was said about intermittent fever. An examination of the blood was made in one case only. The result was negative. The author claims to have described a new disease, and this claim receives support from Professor Hoffmann, who, in an appended note to the article, states that he witnessed an epidemic outbreak of what he terms *Fichtner's disease* in several members of the same family. But before adding another disease to our already overburdened nosology, it would seem to me that Fichtner should have presented more data, and should have given good reasons for excluding malaria or other infectious diseases.

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* Volkmann's *Klin. Vortrage*, No. 75.

† Ibid.

‡ *Deutsch. Archiv f. Klin. Med.*, Bd. xliv., Heft iv.

Hæmatozoa in the blood.—The writings of Laveran* Marchiafava, and Celli,† Osler,‡ Councilman,§ Shattuck,‖ James,¶ and others have made every one familiar with the micro-organisms that occur in the blood of patients suffering from malarial poisoning, and it is only necessary for me to treat of them from a diagnostic point of view. But first a few practical hints about the method of obtaining the requisite drop of blood from the finger-pad of a child. So as not to frighten the little one, it is advisable to keep him in ignorance as to what you are going to do, and pretend you are playing with him by tying a soft cord around the last phalanx, in order to produce the necessary congestion in the finger-pad. The pricking should be quickly and deftly done with a sharp-pointed needle, or with—what is better still—a sharp pointed æsthesiometer—a suggestion for which I am indebted to Dr. James. Let me here, also, express my thanks to this gentleman for his courtesy in examining the blood of some of my cases, and for demonstrating to me the micro-organisms obtained in some of his cases in adult life.

The diagnostic importance of the hæmatozoa or plasmodium malariæ is still a matter of doubt, although the weight of evidence is decidedly in favor of their being of pathognomonic value. In a recent note from my highly-esteemed friend and former teacher, Dr. Osler, it is stated "the evidence is accumulating to show the constancy of the forms and the extreme diagnostic value of Laveran's work."

Still, it must be rembered that micro-organisms resembling those occurring in malaria have been found by Rosenstein in the blood of typhoid-fever patients, by Dujardin-Beaumetz in healthy blood when the evaporation of the serum was for a time hindered, by Hoffman in pernicious anæmia and by Pfeiffer in scarlet fever, mumps and vaccination. James** examined the blood of seventy-six patients suffering from a variety of diseases other than malaria, but including those just mentioned. He states that, in a number of instances, he found micro-organisms which might be mistaken by an inexperienced observer for those met with in malaria, but that any one acquainted with the latter would at once recognize the difference in appearance, which, he says, is marked. So much seems certain that, in order to detect the true forms, one must possess considerable skill and acquaintance with that kind of work. It appears that the hæmatozoa are present only in cases of rather a severe type, or during the paroxysm in less grave forms. Osler has, however, found them in five cases of chronic malaria which did not appear to be very grave. They rapidly disappear on the administration of quinine. Even when present, they are not easily detected, as their number is scanty, and several slides may have to be examined before a single plasmodium is found. I searched for them in fifteen cases presenting unmistakable evidences of acute malarial poisoning. In not a single instance did I succed in discovering any. A few of these cases were examined by Dr. James, but also with negative results. They may, nevertheless, have been present, for it was seldom that a child would allow his finger to be pricked a second time. Hence, as a rule, one specimen only was examined. The likelihood of having to obtain several specimens before meeting with success is a great drawback to carrying out the examination in children.

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* "Traité des Fièvres Palustres," Paris, 1884.

† "Fortschritte der Medizin," Nos. 14 and 20, 1885.

‡ *Brit. Med. Jour.*, March 12, 1887.

§ *Trans. American Physicians*, vol. I., 1886.

‖ *Boston Med. and Surgical Journal*, 1888, p. 450.

¶ *Med. Record*, January 25, 1888.

** *Med. Record*, January 25, 1888.

The Therapeutic Test.—We are now in a position to discuss the value of quinine as a means of differential diagnosis. Every physician will recall cases in which, after exercising the greatest care and thoroughness in the examination and observation of his patient, he will still be in reasonable doubt as to the nature of the disease before him. In such cases—which are, after all, rare in the practice of the careful and scientific physician—the administration of quinine is justifiable as a means of settling the diagnosis. It has its undoubted value, when properly applied, after we have exhausted all other resources and are still in the dark. But, unfortunately, by the majority of physicians the steps of forming a diagnosis of malaria are taken in the opposite direction. Does the child suffer from chills, lassitude, malaise, headache, etc.—symptoms common to malaria and a host of other affections—quinine is indiscriminately given. If the symptoms do not readily yield—and they do not sometimes, even when due to malarial poisoning, especially in the chronic form—malaria is excluded, often unjustly. It is then, perhaps, that a thorough examination is made, or the physician goes on groping in the dark, trying a variety of remedies in succession, among which anthelmintics figure prominently.

The diseases, in my experience, most likely to be mistaken for acute malaria are acute gastritis and typhoid fever. We have already seen how a mild attack of acute gastritis in a nervous youth may be attended with periodic chills. But in this disease the spleen is not found enlarged. If we adhere to the idea that malaria in childhood is always, with but very few exceptions, attended with swelling of the spleen, we cannot fall into the error of mistaking acute gastritis for malaria. As an illustration of this let me narrate, somewhat at length, the following case:

J. W., æt. three years, was brought to the clinic July 15, 1889, by his mother, who gave the following story: He had always been strong and healthy until four weeks before, when he began to suffer with fever and anorexia. During the first week of illness, he had daily three febrile attacks: one in the forenoon, one late in the afternoon, and one at night, each of which was followed by sweating. After that the febrile attacks occurred only every other night. On the day following the febrile night the child would be peevish and out of sorts, but on the second day he would be quite lively and seem fairly well. For the first two weeks he was treated for malaria by a well-known pediatrician, and was given quinine in full doses regularly. But as the child, in spite of this, continued growing worse, the mother became discouraged and left off treatment. After the lapse of two weeks more, and as the child seemed to be getting no better, she decided to bring him to the clinic. At the time of the first visit it was noted, "The child, though fairly healthy looking in the face, shows marked emaciation of the trunk and limbs. The tongue has a peculiar appearance. Running along the centre and occupying about one-third of the width of the dorsal surface is an elevated ridge of a grayish-yellow fur; the remainder of the dorsum is smooth and unduly red. The bowels are constipated, and the abdomen is distended and gives a tympanitic note all over. *There is no enlargement of the spleen.* No fulness in the left iliac region. The inguinal glands are moderately enlarged. The rectal temperature 102.3°. The lungs and heart are normal. An examination of the blood with 1-12 oil immersion lens gives negative results." He was given four grains of calomel and soda every second night, and a mixture of rhubarb and soda t. i. d. Liquid diet was ordered. Two days later the following note was made: "Child very much improved; abdomen less tympanitic; tongue cleaning; rectal temperature 99°. July 22. 'Quite well in every respect. He has had no fever since he began treatment.' The inguinal glands still seem larger than normal." He continued in attendance regularly every two days, so as to be kept under observation, until August 26. He had remained perfectly well and had gained flesh. The glands in the groin could then scarcely be felt. The temperature was taken at each visit, and was never found to be above 96° in the rectum.

The case was instructive to me in several ways. The emaciation had been so great and the illness apparently so grave—although the little fellow walked about—that at first I suspected tuberculosis of some structure, probably of the peritoneum. I at once excluded malaria from the circumstance that the spleen was of normal size. Typhoid fever was excluded for the same reason. Besides, typhoid fever of four weeks' duration, even if mild, is attended with more physical prostration. Dr. A. Seibert,* in a suggestive article on grave acute gastritis in early childhood, gives the histories of three cases, one of which resembled typhoid fever and another intermittent fever; but the author justly excluded the latter in absence of splenic enlargement. By the majority of physicians vomiting is looked upon as a prominent symptom of gastritis in early life, and as this symptom, in fact, is more often absent than present, the affection is frequently overlooked. Instead of gastritis the diagnosis of "remittent fever," "malaria," and "bilious fever" is not uncommonly made.

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* *Jahrbuch für Kinderheilkunde*, 1887.

In the differential diagnosis of typhoid we receive no assistance from the condition of the spleen, inasmuch as the organ swells considerably in that disease, as has been already fully dwelt upon. Pronounced cases, of course, offer no difficulties, but, in my experience, these are the exception. One meets with cases of "walking typhoid" just as frequently among children as among adults. Scarcely a week passes that I do not see one or two such cases at the Vanderbilt Clinic. Some authors lay great stress on the negative value of herpes labialis as a diagnostic symptom. Liebermeister * and others would exclude typhoid fever in the presence of herpes of the lips or of the nose. On the other hand, herpes of these parts are rather common in acute malaria. Prodromata, although not as frequent an occurrence in the typhoid of children as in that of a more advanced life, do sometimes occur. Of these epistaxis and headache possess the most diagnostic value. In typhoid the temperature-curve will be different. It will show that the exacerbations always occur in the evening, while in malaria they may occur in the forenoon. Further, in typhoid the elevation of temperature is constant; in malaria, excepting in the remittent type, which is seen only in very malarious regions, the febrile attacks are separated by intervals of apyrexia of at least several hours' duration. The appearance of a roseola rash in typhoid is of pathognomonic value. But for this we have to wait twelve days after the onset of the fever, although Jürgensen † states that in the mild cases of typhoid in adults the rash occurs as early as on the fifth day It is, however, a more constant sign in the typhoid of early life than in that of advanced life. In children the rash is more likely to make its appearance first on the lower part of the back than on the lower part of the front of the chest and abdomen, as in adults. In the majority of cases of typhoid in children the tongue will show the characteristic appearance, the dorsum being coated heavily with a grayish-white fur, while the edges and tip are of a bright red color. Lastly, if we are still in doubt, an examination of the blood should be made. Of course, it is in doubtful cases like these that quinine finds some value as a diagnostic test.

As an illustration of the difficulties sometimes encountered in forming a diagnosis allow me to relate briefly the following case.

M. A., a little girl twelve years old, came alone to the clinic on Aug. 7, and stated that her health began to fail about two months before, and that for the last six weeks she had had a daily chill followed by fever, but not by sweating. That was all I could ascertain from her. I found her quite anæmic, with a dark yellowish discoloration of the skin. The tongue was coated with a heavy white fur, and the tip and edges were red. She said that her appetite was *nil*, and that for some days she had vomited everything she took, and that her bowels were rather loose. A careful examination revealed dry rhonchi all over the chest and considerable enlargement of the spleen (four inches vertically). Rectal temperature 102°; pulse 120, soft and small. She was told to go to bed and was ordered a milk diet and a mixture of bismuth and hydrocyanic acid. August 9 she called again. Vomiting had ceased, the tongue was cleaning, and the bowels were not so loose She had no chills; the size of the spleen was the same; the temperature was 103°. She was told to continue with the same dietetic regimen, and was given pill quinine five grains t. i. d. August 12. No change; splenic enlargement persists; temperature 102°; pulse 120; a few suspicious spots on the lower part of the chest. She was now given antipyrin as an antipyretic, and was ordered resorcin five grains t. i. d. She was instructed to remain at home and go to bed. My assistant, Dr. Schelpert, kindly undertook to watch the case for me. The temperature ranged from 101° to 103° until the 19th, when it fell to the normal. She called at the clinic on the 23d, and seemed quite convalescent. She made no complaint; the tongue was clean, appetite was good, and the temperature was normal. The spleen was of normal size. On the 26th she called again, saying that on that morning she had had a chill, and that she felt quite ill since then. I found the rectal temperature 105°, the pulse 120, and the spleen moderately enlarged. She was put upon the former treatment, and in seven days convalescence set in again—permanently this time.

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* Loc Cit.

† Volkmann's *Klin. Vortrage*, No. 61.

The case was undoubtedly one of typhoid, which probably had been running for three or four weeks before coming to the clinic. The chills, from which the patient stated that she had suffered daily, were doubtless the chilly sensations which patients frequently experience when they walk about with an elevated temperature. They ceased as soon as the patient was put to bed and before any quinine had been administered, which medicine had no effect whatever upon the course of the disease.

Any doubt that might have been entertained as to the nature of the illness was entirely dissipated when I made a visit to the house during her relapse, and found that the mother was suffering from unmistakable typhoid in the fourth week, from which she has since died.*

Chronic malaria.—Under this heading I would describe the milder forms of paludal poisoning, which formed at least sixty per cent. of my cases. There may be chills and fever at the outset, which the mother has usually forgotten, unless she is questioned about them, or, what is more frequently the case, the affection is insidious from the beginning. The mother will tell you that the child has been ailing for some time, but she cannot say just when it began to show signs of ill health. I would make a distinction between this form and that of malarial cachexia—a term to which I would apply the severer forms of protracted paludal poisoning, that met with in very malarious regions. I have had little experience with the latter, and will leave it out of consideration in this paper.

Chronic malaria manifests itself by a variety of symptoms, which may or may not show periodicity. Prominent among these are lassitude, drowsiness, a lack of energy, tiring on slight exertion, headache, dizziness, wandering pains in various parts of body, chilly sensations, neuralgia of the intercostal nerves, restlessness at night, anorexia, vomiting, constipation, rarely diarrhœa, bloody diarrhœa, emaciation, a dirty brownish-yellow tint of the skin, anæmia, syncopal attacks, urticaria, night-sweats, asthmatic attacks, pain over the region of the spleen.

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* Since the above was written, three more members of the family have had typhoid fever.

None of the enumerated symptoms, taken alone or conjointly, justify a diagnosis of malaria. They are met with in a number of other chronic diseases, but notably in chronic dyspepsia and what, for want of a better term, we will call debility, congenital or acquired. Here even more than in the acute form enlargement of the spleen is a *sine quâ non* in the diagnosis of malaria.

Some of the foregoing symptoms deserve special consideration.

Headache.—There is nothing characteristic about the pain in the head which would indicate its pathology. It was not a common symptom in my cases. On the other hand, I have met with this symptom much more frequently in chronic dyspepsia and in children who applied themselves too closely to their studies. I have never observed a case of brow ague, which is so common a feature of chronic malaria in the adult. Eustace Smith* says that it is never met with.

Vertigo is said to be a rare symptom in children, and when it does occur it is considered by many as almost pathognomonic of malaria. It was not present in any of my cases. Bohn only saw it once in four hundred and sixty-five cases. But it was a prominent symptom in two cases of tænia lata that came under my notice. I have not infrequently observed it follow slight concussion of the brain, caused by a fall, which the mother had forgotten until questioned about it.

Bloody diarrhœa.—I have met with it only once. It occurred every night; the child having from four to six stools, consisting mostly of blood. There was no looseness of the bowels during the day. At times this symptom does not exhibit any periodicity, and is distinguished from dysentery by the absence of pain and tenesmus, and by the absence of any considerable quantity of mucus in the stools. Further, in dysentery the spleen is not appreciably enlarged.

Vomiting, as an only symptom, was present in three of my cases, in two of which it occurred periodically, in one daily, and in the other every other day. On the same day that the child with the daily vomiting came under my care at the clinic, another child was brought there to me with exactly the same symptom. In the latter case there was no enlargement of the spleen; but on questioning the mother, I learned that the child, some days before, on going down stairs, had fallen a distance of three or four steps. The vomiting had begun since the fall, and was arrested in a few days by keeping the little one in bed and giving it daily three doses of fifteen grains each of bromide of potassium. Protracted vomiting in early life is not, in my experience, an uncommon symptom following an insignificant fall. In some cases it appears to take on a periodic type, as in the case alluded to.

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*Loc. cit., p. 149.

A peculiar color of the skin.—Much diagnostic importance is attached to a pigmentation of the skin, showing itself in a peculiar "bistre" tint. It probably possesses great value in the severer forms of malarial cachexia, but it is not a characteristic sign in chronic malaria. In none of my cases was it at all striking. In several of them the skin presented that dirty sallow appearance which is common to all affections attended with malnutrition, and in other cases the skin was of the normal hue.

Attacks of syncope.—I have not been able to find any mention of this symptom in the literature of malaria in early life that I have read. It occurred in two of my cases. In one it preceded the onset of the chills; in the other, a little girl four years of age had had no chills, but had fainting spells every day at 11 A. M. The mother stated that the child grew feverish after the syncopal attacks, and that she complained of feeling chilly at night. It would probably have been more proper to have described this symptom under acute malaria as one of the phenomena that may replace a chill in early life.

My friend, Dr. B. Sachs, tells me of a case that he had in private practice, in which a child, four months old, had for five or six successive days several fainting spells, or rather attacks of semi-collapse, in which the child apparently lost consciousness. The eyes rolled up and inward, the body became covered with a clammy perspiration, and the pulse was thread-like. The temperature, taken several times a day, showed moderate elevation (103°) at times, and at other times it was normal. The spleen was but moderately enlarged. The child was on the breast, and there was no evidence of gastric or intestinal disturbance. A diagnosis of malaria was made by exclusion. Quinine was administered, and the baby made a rapid and satisfactory recovery.

Urticaria is said by many to be a common symptom of chronic malaria in the child as well as in the adult. Bohn met with it only occasionally, and then mostly in the acute variety during the paroxysm. I have only twice seen chronic urticaria accompanied by enlargement of the spleen. But in children, chronic urticaria, not of malarial origin, is often cured by full doses of quiuine. This circumstance doubtless accounts for the prevalent opinion that the affection is frequently caused by paludal poisoning. It forms a good illustration also of the likely errors in diagnosis that may be committed when much reliance is placed upon the therapeutic test.

Night-sweats.—This is another symptom the mention of which I have not been able to find in literature. It was present in two of my cases, one of which was quite instructive to me. The little girl, six and a half years of age, had always been delicate, and had suffered from rickets in infancy, the evidence of which she showed in a pigeon-shaped breast. She had diphtheria eight months before, and scarlet fever two months later. There was a loud systolic murmur at the apex, but no increase of cardiac dullness. The lungs were sound and the urine normal. No attention was paid to the spleen. The night-sweats were looked upon by me and by others as due to overheated rooms, to too much bed-covering, and to the delicacy of the child's health. Still, it was thought advisable to keep her under observation for future developments. Under improved hygienic surroundings and a tonic treatment of several months, she grew considerably stronger and gained in flesh. But the night-sweats persisted, although they became less severe and less constant. About this time I began to make it a part of my routine at the clinic to carefully map out the limits of the spleen in every case. To my surprise, I found that her spleen was considerably enlarged (three inches vertically). She was now put upon a course of quinine and arsenic, and in the course of a few weeks the night-sweats entirely ceased. It is necessary to add that other chronic conditions which might give rise to a splenic tumor were excluded. The heart trouble could not possibly be credited with it, as circulatory disturbances were not present.

The chronic affections in childhood attended with marked enlargement of the spleen are leucocythæmia, lymphadenoma (Hodgkin's disease), and amyloid degenerations of the internal organs. In the differential diagnosis of these affections it must be borne in mind that leucocythæmia and amyloid degeneration may be the sequelæ of long-continued malarial poisoning. They each, however, possess characteristics of their own, and are easily recognized.

Treatment.—My paper has already reached such a length that I can only say a few words on this subject. I will make the confession at the outset that I have not found the cure of malaria—especially the chronic form in early life—the easy matter that some observers would lead us to suppose. Of course, quinine forms our sheet-anchor. I am in the habit of prescribing it in solution with aromatic sulphuric acid and syrup of lemon. This mixture is ordered to be given in sugar-water. Children seem, in most instances, to take it in this way readily. When it causes vomiting, I add aqua lauro-cerasi. I prefer giving the quinine in two or three large daily doses (five grains to a child five years old) until all acute symptoms subside. After this a single large dose is given every third or fourth day for a couple of weeks. In the meantime the remedy is given in smaller doses, combined with liquor arsenici chloridi and acidum muriaticum dilutum, three times a day for several weeks. In private practice I find that the tablets of chocolate of quinine, each containing one grain of the tannate, is a very pleasant form of administering the drug. I prefer those manufactured by Hazard, Hazard & Co., of New York, to the imported ones, as the chocolate is fresher and is not so likely to disagree with the child's stomach. Bohn speaks very highly of the tannate salt in the treatment of children, but says it must be given in double the dose that the sulphate or muriate is given. Chilren at the breast might have the drug introduced into their system by administering it to the mother, but I have no data on this point. I have found that suppositories of quinine act very well where it is impossible to give the quinine by the mouth. I have never tried inunctions. Hypodermic injections should only be resorted to under the most urgent circumstances from their likelihood of being attended with abscess formations. Children are very prone to relapses, and to prevent these I have had good results with pure nitric acid,* in doses of two to five drops, well sweetened and diluted. When the patient comes under treatment, unless he is suffering from actual diarrhœa, it is my custom to give a few purgative doses of calomel combined with soda. It has been a very common experience with me to find that, although all the symptoms had vanished under anti-periodic treatment, the enlargement of the spleen would persist. As it is a well known fact that relapses are more liable to occur while the spleen remains enlarged, and that the chronic congestion may lead to permanent changes of structure, it behooves us to use every available means to bring the organ back to its normal size. Professor Jacobi, in his clinical lectures, recommends for this the administration of ergot. The drug has proved very efficacious in my hands. I gave usually the fluid extract in doses of ten to fifteen minims to a child five years old. It seemed to me that the ergot had no effect upon the malarial poison itself. A few cases of tumor of the spleen resisted even this treatment, and then I resorted to inunctions of ammoniated mercurial ointment over the region of the tumor, and gave strychnine internally. If it is thought advisable to give salines, it will be well to bear in mind an old observation of Glax and Kirch, and which has recently been substantiated by Pollatschek.† These observers noticed that patients undergoing a course of treatment at Carlsbad were prone to have a return of intermittent fever if they had ever suffered from it before.

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* This remedy is recommended by Dr. S. M. Bemiss.

† *Berliner Klinische Wochenschrift*, No. 24, 1889.

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DISCUSSION.

Dr. Holt.—There is one point in regard to the presence in malarial cases of splenic enlargement sufficiently great as to be positively diagnosticated of which I wish to speak. It seems to me that there are a large number of cases in children with a history of exposure to malarial poison, with pretty clear symptoms indicating such affection, and curable by quinine, but in which there is not sufficient enlargement of the spleen to be made out by ordinary methods of examination. I have lately made the test of enlargement in infants a sufficient degree of swelling to be made out by palpation. Percussion is often deceptive. The distention of the colon may render it difficult or impossible to be certain about the splenic outline. It seems to me that in the vast majority of cases where the organ is considerably enlarged it can be felt, and that where it is slight we cannot be certain about it. Furthermore, that there is quite a large class of cases of malaria in which demonstrable enlargement is wanting.

Dr. Fruitnight.—The presence of enlargement of the spleen would aid in the diagnosis, but it is hard to be assured in children that the spleen is enlarged. Enlargement of the spleen with the periodicity and other symptoms would be corroborative, but we could not depend upon enlargement of the spleen alone for our diagnosis.

Dr. Jeffries.—Within a week I treated a child who, two days after its return from the country, had a convulsion. I examined the blood and found the plasmodium. Quinine was then given, and the child recovered. In this case the spleen was not found enlarged.

Dr. Holt.—I am sorry that the author has not distinguished between infants and children five or six years of age. In the case of infants many points come up in connection with the diagnosis which are not met with in older children. In the latter the disease runs about the same course as in adults. In young children the diagnosis is often difficult. The one disease which which malaria is most frequently confounded is pneumonia. In some cases it is impossible to say for two or three days whether the child is suffering from pneumonia or malaria. I have now a child under observation who, for the first four days of its illness, showed, upon the most careful and rerepeated examinations, no physical signs of pneumonia. The temperature would run up to 104° F. in the afternoon, and drop nearly to normal in the morning. At the end of four days a small area of consolidation was discovered high in the axilla and at the apex in front.

If we accept the plasmodium as the test of malaria, and the only test, we must admit that the vast majority of cases which we see in New York are not cases of true malaria. Two years ago the blood from quite a number of patients was examined by Dr. W. B. James and myself, and we were not able to demonstrate the plasmodium in a single case in which the disease had been contracted in New York City. The teaching of Dr. Janeway has long been that a case exhibiting well-marked paroxysms was seldom seen in New York City unless the patient had contracted the disease elsewhere.

Dr. Carr.—Looking over the record of four hundred and sixty-four cases seen, at St. Mary's Free Hospital for Children, I found only one in which the diagnosis of malaria was made by enlargement of the spleen. In one hundred and forty-two of these cases there were marked signs of gastro-intestinal or intestinal disturbance. In listening to the paper, it seemed to me that many of the symptoms mentioned as being common in chonic malarial troubles were just as common in obstructive gastro-intestinal catarrhs. Those cases with coated tongue, pallor, or peculiar yellowness, emaciation, irregular sweats, and fever are relieved as frequently by mercurials as by quinine. I must say that, in my experience, a mercurial has given the better result. I have not examined for enlargement of the spleen so often as Dr. Vineberg, and doubt whether I could determine the enlargement so exactly.

Dr. Siebert.—For a number of years I have found in every case of malaria a symptom which I believe to be peculiar to that disease—namely, a greenish coating of the tongue. In severe cases this green is of a very dark shade. In milder cases the shade is lighter. In every case where I see this greenish discoloration, I invariably find enlargement of the spleen. I have found this greenish coating a very valuable symptom, especially in the chronic forms of the disease.

Dr. Huber.—I wish simply to call attention to a remedy that has not been mentioned, and that is, the use of ergot, particularly in cases where the spleen is enlarged. In cases where the diminution of the size of the spleen under quinine has been slow, the use of the fluid extract of ergot has been followed by rapid diminution.

Dr. Fruitnight.—There is one point in the diagnosis of this affection to which I would refer, and that is the imperfect ratio between the fever and the nervous disturbance accompanying the fever; for instance, we may see a child with a temperature of 105° F., and yet there may be no marked cerebral disturbance. The child does not appear to be so ill as the high temperature would warrant. This is an important point in diagnosis.

I have found that pneumonia and typhoid fever are frequently mistaken for this disease. Scarlet fever also is often diagnosticated when malarial disease alone is present. This is due to the fact that a bright, general erythema, caused by the high temperature is often present. This erythema is not persistent, and soon disappears when the temperature has been reduced.

The President.—In considering this subject we must distinguish, as Dr. Holt has said, between the infants and older children. The older children have the intermittent fever of adults, and it can be easily diagnosticated. In the infant the diagnosis is difficult. In many cases I am not sure that we can diagnosticate malarial fever as well as Dr. Vineberg appears to do. I frequently miss the enlarged spleen. I have seen on the post-mortem table enlarged spleens, which I could not make out during life. I have been often compelled to make the diagnosis of malaria—which I make very seldom—mainly by exclusion.

As far as ergot goes, that is a practical point which may be of importance. I used it some thirty years ago in a case of malarial fever with enlarged spleen, which would not yield to arsenic, quinine, and the iodides. The ergot reduced the size of the spleen and broke up the fever when nothing else could. I have frequently used it either alone or in connection with quinine since I published my first observations, nearly thirty years ago, in the *American Medical Monthly*.

Dr. Keating.—There is probably no branch of the profession which meets with so much competition with homœpaths as we do, and this is seen particularly in the methods of administration of drugs in such diseases as malaria. Undoubtedly sufficient attention has not been paid to methods of dosing and palatability of medicines used for young children. Recent papers, and particularly those of the President of this society, have been of great value in this direction. We are accustomed to give large doses of quinine without paying much attention to the method of administration. This is an important point for consideration. What is the experience of members with the more insoluble and tasteless preparations, such as the tannate? Are they of service? If not, what is the best way of prescribing quinine?

Dr. Vineberg.—The point which I wished particularly to bring out was that enlargement of the spleen is not easily made out in children if palpation is relied upon. I have often found that a spleen which gave a dullness of four inches did not project beyond the border of the ninth or tenth rib. There is an anatomical point which accounts for the fact that the spleen rarely projects below the ribs in children. The costo-colic ligament, on which the spleen rests, is very rigid in early life. Any one who relied upon palpation would overlook ninety per cent. of the cases of enlarged spleen. Very light percussion should be employed to determine the area of splenic dullness. If force is used, you will get the tympanitic note of the stomach or intestine.

Regarding the evidences of malaria in very young children, I omitted that part of my paper in reading it. Under two years of age chills are said never to occur. Instead of these there will be a little blueness of the skin or the finger-nails will become blue.

The administration of quinine, in private practice, I find to be best carried out by giving the tannate in the form of a lozenge with chocolate. Each tablet contains one grain, and they are readily taken.

In regard to the color of the coating of the tongue. This is a matter which depends largely upon the examiner. I have never been able to detect any peculiarity of the coating of the tongue in cases of malaria.

Dr. Huber.—I have given quinine in the manner recommended by the President—that is, mixing the dose of quinine with simple syrup at the time of administration. Given in this way the dose is not as disagreeable as if the mixture had been made some time. The quinine can also be given in simple elixir or in the compound elixir of taraxacum.

Dr. Fruitnight.—I usually follow one of three methods in giving quinine according to the age of the patient and the tolerance of digestive organs. In very young children I, as a rule, employ the oleate rubbed into the surface of the body. In older children I suspend the drug in syrup of wild cherry. Where this is vomited, I give it in suppositories. To those children who can swallow them I give the small gelatin-coated pills.

Dr. Caillé.—It must be remembered that it is impossible to hide the taste of quinine when given in solution. The tablets of tannate of quinine contain very little of the specific drug, and I think a sufficient dose cannot conveniently be given in this way. Personally, I get along very well by giving the quinine suspended in compound elixir of taraxacum. Three to five grains can be given in a teaspoonful of the elixir.

Quinine can also be administered by inunction with oleate of quinine. Personally, I have had no experience with this method.

Dr. Holt.—It seems to me that all methods of administering quinine in solution are bad. The only difference is in the degree of badness. I have tried various modes of suspending the drug, but with the same result in all. I have used the oleate of quinine by inunction without much success. I have also used the oleate by the rectum, but I think that it is absolutely useless. In cases in which the drug in suspension or in solution is vomited, or will not be taken, I rely on chocolate tablets. These can be used when nothing else will be taken.

Dr. Watson.—I use quinine by two methods. In the first the drug is triturated with an equal quantity of sugar of milk and dispensed in powders, and the mother is directed to mix each dose with a teaspoonful of the syrup of chocolate at the time that it is given.

I have at the dispensary a mixture containing quinine sulphate, one grain; sugar of milk, one grain; powdered liquorice-root, one-eighth grain. This, after trituration, is dispensed in powders, and the mother is directed to mix the required number of powders in molasses, chocolate, or coffee at the time of administration. The second method is for the mother to hold the child's mouth open and drop a one, two, or three-grain quinine pill into the throat. This is swallowed readily, and answers every purpose. It is my custom to give all the quinine required for the day during the first three or four hours of the morning.

Dr. Latimer.—After considerable experience in the administration of quinine, I have come to the conclusion that the best general vehicle is the fluid extract of liquorice. I am also convinced that quinine can be satisfactorily employed by inunction. The best preparation is a solution in oleic acid diluted with vaseline or lanolin. We have heard nothing of the old-fashioned method of giving unpleasant drugs in scraped apple or similar vehicle. This answers very well for older children.

Another method which applies equally to all obnoxious drugs is to have the child instructed in the swallowing of pellets beforehand. I instruct the mothers to practice the children in the swallowing of pellets of sponge cake, sugar pills, and the like. When they learn to do this, pills or capsules can be readily taken.

Dr. Carr.—The yerba santa preparations of the National Formulary, an aromatic elixir and an aromatic syrup, are more palatable than the taraxacum. In hospital practice the fluid extract of liquorice answers very well, although not so good a vehicle as the yerba santa.

The President.—The tablets to which reference has been made contain, I think, not the tannate but the sulphate of quinine. The effect is therefore an active one. One grain of the sulphate is equivalent to two and a half grains of the neutral tannate. Four or five grains of quinine can be readily taken mixed with chocolate. Coffee is also useful. Ten grains can be easily taken in two tablespoonfuls of black coffee. Syrup of coffee can also be employed with advantage. The quinine and the vehicle should not be mixed until the time of administration. Although it required seven hundred and eighty parts of water to dissolve one part of quinine, yet a small quantity of quinine will make the mixture as bitter as a larger quantity.

The method by inunction was recommended some twenty-eight years ago. The objection to that is that you cannot determine the dose. The oleates also irritate the skin in a short time.—*Archives of Pediatrics.*

THE EARLY DIAGNOSIS OF EXTRA-UTERINE PREGNANCY.* By J. C. Reeve, M.D., of Dayton, Ohio.

No subject in Gynæcology, if, indeed, in any department of medicine, has made such rapid and substantial progress within the last decade, as extra-uterine pregnancy. Light is finally breaking in upon one of the most intricate and complicated of pathological processes, and by the extension of physiological knowledge, and by clinical observation, that which was an unsolvable riddle to former generations is becoming fully understood. The cause of humanity has gained equally with science. One of the most serious calamities which can happen to woman in connection with the transmission of life, one which is overwhelming in its effects and appalling in its sudden mortality, is at last deprived of much of its danger by the resources of therapeutics and the boldness of modern surgery.

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* Read before the Ohio State Medical Society.

The part which this country has taken in the advance of this subject is a cause of pride and congratulation. The clear recognition of the necessity of laparotomy for rupture of the cyst, by Stephen Rogers, of New York,* marks an epoch in the history of the subject. Others had suggested this method before, but he, more clearly and more vehemently, urged the necessity of this operation upon the profession nearly twenty years before it was executed. Parry's treatise, published in 1876, is another landmark. This gives the scattered knowledge of the times, admirably collected, presented, and commented upon. The scholarship, the judgment, the critical acumen of this little volume have won the highest enconiums from foreign writers, who have borne testimony to the great loss which medical science sustained by the author's early death. More recently, the application of electricity for causing the death of the fœtus, and thus by harmless means rescuing the patient from imminent peril and saving her from the dangers of laparotomy, has given renewed life to the study of the subject. This measure had in this country its earliest successes, and cures by it have since been so numerous that it has conquered for itself a position as a safe and reliable remedy, and as one of the glories of American gynæcology.

I fully recognize the fact that a paper presented to an assemblage of practitioners should be based largely upon personal experience, and that doctrine should be illustrated, or theory enforced, by the recital of actual observations. I deplore, therefore, that I have not clinical experience to lay before you. Nevertheless, it is justifiable to present such a paper when the subject is one upon which but very few men have had a great deal of practical experience. Mr. Lawson Tait who has had to do, ante and post-mortem, with about seventy-five cases, yet he never had the opportunity of making an early diagnosis. Dr. Thomas has seen over thirty cases. These are the largest experiences of the world. Winckel, of Munich, all his life at the head of a large obstetrical and gynæcological clinic, has met with but thirteen cases. The vast majority of cases of extra-uterine pregnancy has been reported by individuals who never saw one before, or have seen but a few cases. We are with this subject, then, exactly as we are with deaths from anæsthetics. But few men have had the misfortune to see more than one; no one has seen many of them. Still, from a careful study of the single cases, as reported by individuals, much of value has been learned as to the different modes in which the fatal accident occurs, and as to the best means of avoiding it. By such a study of isolated cases of extra-uterine pregnancy I attempt to present one portion of the subject. The whole subject is far too wide for complete consideration, and I limit myself to early diagnosis. My original intention was to take each symptom and note its presence or absence in each reported case, and then tabulate the results. A paper upon this plan would manifestly be complex and extensive, and probably not as useful as one in which the results of a careful study of cases are clearly presented, each symptom which may be present being considered in regular order. Such a paper I have attempted to prepare, impelled by the fact that the signs and symptoms of abnormal gestation are not so fully presented in the text-books as they should be. From the nature of things the majority of cases will fall first into the hands of the general practitioner, and he should be acquainted with the points of diagnosis that relief may be afforded the patient in due season.

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* Trans. American Medical Association, 1867.

Cases of extra-uterine pregnancy may be classified as follows:

I. A very small number present no well-marked symptoms, and go on to full term; labor sets in, and only then the true state of affairs is discovered.

II. A somewhat larger, but still a relatively small number, are first announced by the symptoms which speedily overwhelm the patient. Rupture of the cyst occurs, and death, by shock and hæmorrhage, speedily ends the scene.

III. A large majority of cases, in which marked symptoms are present from an early period. Of these symptoms no single one may be pathognomonic, yet by a concurrence of several of them at once, or by several appearing in succession, a diagnosis may generally be made. It is to these symptoms that I beg leave to direct your attention.

First in order comes the probable existence of a pregnancy. The reflex signs of this condition are present; on the part of the digestive system, depraved or changed appetite, nausea, vomiting, salivation. The breast and nipples show the usual changes. As a general rule, the patient believes herself to be pregnant. This has been the case so frequently that some authorities hold it to be essential. Bernutz and Goupil found this feature absent but four times.* When the patient has already had children, her testimony is, of course, more valuable. I know of but one authority who discredits the value of this point in the history of a case. Mr. Tait, in his late work on ectopic gestation, expresses the opinion that no reliance can be placed upon it. Still, at a later period, in making a diagnosis of ruptured cyst, he lays due stress upon the probable existence of a pregnancy when the overwhelming accident occurred.†

There are two points to be noted in regard to the pregnancy. First. In extra-uterine cases a considerable period of barrenness has preceded its occurrence so frequently as to have attracted especial attention. The existence of a desquamative salpingitis, whereby the tubes are deprived of their epithelial lining and brought to a condition similar to that of the interior of the uterus, is maintained by Mr. Tait to be the leading etiological factor in these cases. The explanation seems reasonable and far more probable than that of an obstruction of the tubes. If, then, a patient is pregnant some years after the birth of a child, or becomes so only after several years of married life, the fact should receive due consideration. Second. The ordinary symptoms of pregnancy are likely to be exaggerated, especially those of the pelvis. In the language of Parry, "the pregnancy is a stormy one."

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* Clinique sur les Maladies des Femmes.

† Brit. Med. Journ., June 28, 1884, p. 1250.

Next in order comes derangement of menstruation. There may be the amenorrhœa which belongs to the ordinary pregnancy, but much more frequently the flow is irregular and it may be excessive, and even continuous. Recurring gushes of blood occur, and, with pelvic pains, often lead both patient and practitioner to believe that an abortion is taking place. There will be often no further doubt upon this point should the decidua be expelled *en masse;* it is taken for a "mole" or "false conception," and looked upon as the termination of a miscarriage.

Examination of the pelvic region reveals, in many cases, great tenderness of one or the other iliac region or of the hypogastrium; there may be so much as to prevent a satisfactory investigation. Great pain at some point of this region may be complained of, and the pain radiates to the loins and down one or both thighs. There may be a febrile condition present and all the evidences of successive attacks of pelvic peritonitis.

A vaginal examination would of necessity follow such symptoms. In a case of extra-uterine pregnancy such an examination shows certain changes in the uterus and the presence of a tumor. The uterus is enlarged, in the early period, in proportion to the duration of the pregnancy.

It is displaced; the gestation cyst has pushed it to one side or the other, or forward so that the cervix is found close to the pubic arch. The os is patulous, the finger easily enters it. The uterus is empty. If amenorrhœa is present, the practitioner would, of course, hesitate to ascertain this by the passage of the sound; but when metrorrhagia exists, or the decidua has been expelled, there need be no hesitation. The tumor to be felt *per vaginam* presents some well marked features which serve to differentiate it from anything else generally found in this locality. It is round, smooth, elastic, giving the sensation of a tense cyst, and, as a general rule, exquisitely tender. It is situated in close proximity to the uterus, yet generally can be made out to be independent of this organ. Two features demand special attention. 1st. The vaginal wall over this cyst or tumor shows active pulsation; vessels can be felt beating by the finger. This feature was recognized long ago by Baudelocque. 2. The size of this tumor can be observed to change within a comparatively brief period. The growth of a gestation cyst gives an increase in size more regular and rapid than belongs to any condition likely to be confounded with it. Thomas says it can be noted from week to week.

In addition to more or less of these symptoms, or possibly, entirely independent of any of them, may come now attacks of severe pain with symptoms of collapse. The patient is found pale, faint, almost or entirely pulseless, with most severe abdominal or pelvic pain.

She seems about to die, and the practitioner may be at a loss to account for her condition unless acquainted with the course of this form of gestation. From this collapse the patient may slowly rally, to suffer again in a short period from similar attacks. Different explanations have been given of these severe paroxysms of pain, accompanied by profound depression of the vital powers. They have been attributed to contractions of the walls of the cyst and to uterine contractions. There is no doubt now that they depend upon partial ruptures of the cyst, or of vessels on its walls, accompanied by a certain amount of hæmorrhage. Post-mortem examination of cases in which these symptoms have several times occurred, has revealed a collection of clots, the difference in age of which could be plainly seen.* The great practical fact is that a succession of these paroxysms may occur before the final and fatal rupture, which they most surely fortell.

In a patient presumably pregnant, having had more than one such attack as this, and having a tumor to be felt *per vaginam*, there could scarcely be a doubt of the existence of extra-uterine pregnancy. But one symptom more could add to the evidence. This is, the expulsion of the decidua. This membrane may be thrown off *en masse*, when it will be readily recognized. In the case under my observation I drew it on my finger like a thimble. It may be discharged piecemeal. The existence of shreds, therefore, in the uterine discharge of a patient presenting any of the symptoms detailed, should awaken suspicion and lead to a microscopic examination. The expulsion of the decidua is a sign of the highest value, and is, by good authority, even held to be pathognomonic.

Two symptoms may seem to have escaped consideration; they are ballottement and the effects of pressure upon the pelvic organs. They belong to a later period than that to which this paper is limited. Ballottement has been observed by Thomas as early, however, as the the third month.† Only exceptionally can it be elicited at so early a period even by a skilful examiner. It should always be sought for; if present, it makes the diagnosis a matter of absolute certainty. Pressure symptoms, of course, become more and more pronounced as the case advances in age.

A diagnosis of extra-uterine pregnancy is to be made, then, by a careful study of the history and of the signs and symptoms of the case in hand. No one of the disturbances it occasions or the changes it causes is of very great weight when standing alone; occurring together, however, the value of each increases in a geometrical ratio. There is an order of occurrence, also, dependent upon the period or progress of the pregnancy which should be borne in mind. The value of a coincidence of the symptoms was recognized by Bernutz and Goupil, who taught that it was by an *ensemble* of symptoms that a diagnosis could be made. An interesting illustration of what is here presented was related by Dr. Hanks, of New York, at the meeting of the British Medical Association, in 1886.* A gentleman, in a consultation, maintained that the case was one of extra-uterine gestation, but agreed to rest the decision upon a microscopic examination of some discharged membrane. This was reported not to be decidua, whereupon he averred his belief that a mistake had been made. A necropsy soon after proved that he was right. It is stated that the microscopic examination was made by a student.

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* See paper by Dr. Johnstone, Jour. Amer. Med. Assoc., Oct. 27, 1888.

† Amer. System of Gynæcology, vol. ii.

A summing up of our knowledge upon this subject would seem to be that while in some cases of extra-uterine gestation a diagnosis presents the greatest difficulties, and in a small number it is impossible to make one, in the majority of cases it can be readily done and even more easily and certainly than that of a normal pregnancy. This has been maintained by the very highest authority, both in this country and in Europe.† Moreover, a diagnosis can be made at an earlier period than in a normal pregnancy. It has been made as early as the eighth and even as the fifth week.‡

The symptoms which have been detailed may be classified partly in reference to the order of their occurrence, but especially as to their diagnostic value, as follows:

I. *Suggestive.—a.* The general and reflex symptoms of pregnancy especially if the pregnancy had occurred after a considerable period of barrenness.

b. Disordered menstruation, especially metrorrhagia coincident with symptoms of pregnancy; gushes of blood, accompanied by severe pelvic pains.

c. Severe pain in the pelvis; attacks of pelvic pain followed by tenderness in either iliac region, and other symptoms of pelvic inflammation.

II. *Presumptive.—a.* The existence of a tumor; this tumor presenting the characteristics of a tense cyst, sensitive to touch, actively pulsating; steady and regular growth of the tumor to be observed.

b. The os uteri patulous, the uterus displaced and empty.

III. *Certain.—a.* Paroxysms of violent and overwhelming pain in the pelvis, with general symptoms of collapse.

b Expulsion of the decidua.

It remains to consider the conditions most likely to be confounded with or mistaken for extra-uterine gestation. They are: abscess of broad ligaments; pelvic hematocele; retroversion of gravid uterus; a small fibroid or fibro-cystic tumor of uterus; a small ovarian or dermoid tumor; a parovarian cyst; tubal disease, as pyosalpinx; pregnancy in one horn of a uterus bicornis; intra-uterine pregnancy. It is not necessary to go over these *seriatim.* While each may in some respects closely resemble the disease under consideration, other characteristics, such as rapid growth, paroxysms of severe pain, with a history of probable pregnancy, will serve for a differential diagnosis. Undoubtedly a pregnancy in one horn of a double uterus would present the greatest, if not insuperable, difficulties of diagnosis.*

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* *Brit. Med. Journ.*, Dec. 4, 1886, p. 1094.

† Among others: Berry Hart and Dr. Aveling, *Brit. Med. Journ.*, December 4, 1886. Winckel, Lehrbuch der Geburtshulfe, 1889. Garrigues, Trans. Amer. Gyn. Society, 1882.

‡ Papers by Dr. Janvrin and Dr. Hanks, Trans. Amer. Gyn. Society, 1886, 1888.

The differentiation of extra from intra-uterine pregnancy is also to be considered. It is most likely to be needed, however, at a later period than that to which this paper is limited. When the pregnancy approaches term there may be such an unusual thinness of the uterine walls that the child seems to be immediately under the skin, and this condition has caused mistake upon several occasions.

The warrant for presentation of this subject, based upon a study of reported cases rather than upon observations, has already been stated to be the necessity of directing the attention of the profession to the subject and laying before them the means of recognizing it. An awakened attention is the first step to diagnosis. In the case which fell into my hands,† I recognizeed that I had something the like of which I had never seen before, and only realized the truth when the extrusion of the decidua threw a sudden light on the case. And it is interesting to read of cases in which even eminent men were befogged until some new symptoms flashed the truth upon them.‡

Still more necessary does it seem to present a careful study of this subject, since doubt has been thrown upon the possibility of an early diagnosis in one of the latest publications upon the subject.‖ This book emanates from one whose experience is the largest in the world. That with this large experience the author has never had an opportunity of making a diagnosis before rupture of the cyst is indeed a singular fact, as he himself recognizes. But because he has not had this opportunity, it is unscientific, to say the least, to throw doubt upon what other men have done and reported; and the statement he makes that extra-uterine pregnancy presents no symptoms other than, or different from, those of disease of the tubes, finds its negation and contradiction in almost every reported case.

This question of diagnosis has been complimented by that of treatment. To consider the latter is not within the scope of this paper; still, a few words are necessary as to this feature and as to the relation between the one and the other. After rupture of the cyst there is but one remedy—laparotomy. The only hope of the patient lies in prompt and bold surgery. Before rupture, electricity has afforded most excellent results; it can be applied by the general practitioner, and has not shown, so far, any evil effects or consequences. Still, there are those who advocate laparotomy as being the best measure even before rupture. Without questioning either their wisdom or their judgment, truth compels the statement that the advocates of surgical methods have displayed a partisanship which does not belong to science. The perils of laparotomy have been belittled, and the possible injurious effects of electricity have been magnified. Not only these, but the diagnosis of cases in which electricity has been successful has been repeatedly questioned, and the capacity of those who have observed them openly doubted. The position has been taken that because ballottement was not observed, or because fœtal bones were not afterward thrown off, there was no certain diagnosis. Most of the observations of the successful use of electricity were at a period before ballottement could be expected, and before fœtal bones exist. Those who thus doubt are in the position of those who would question a diagnosis of pleurisy with effusion, after recovery of the patient, because no liquid had been presented for inspection. Again, under applications of the galvanic or faradic current the tumor in the vagina has repeatedly been observed to become less tense and less tender, to cease to pulsate, its tenseness diminish and slowly disappear. Coincident with these changes, the sufferings of the patient have abated and she has been restored to health. Simply, the treatment confirmed the diagnosis. How often in another line do we pursue a similar course and accept the results without question. The nature of some tumor or ulcer is obscure; we submit the patient to a course of mercury or the iodides, and the lesion disappears. Its nature is then clear. Therapeusis has not confirmed, but it has made a diagnosis.

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* Thomas: Amer. Syst. Gyn., vol. ii.

† Trans. Amer. Gyn. Soc., 1884.

‡ See Dr. Lusk's case, *Amer. Journ. Obstet.*, 1881, p. 333.

‖ Tait: Lectures on Ectopic Gestation.

I present from Charpentier* the following list of diagnostic errors made by eminent men, premising, however, that most of these errors were made at a period which, in a subject upon which our knowledge is so rapidly increasing, may be termed remote:

Huguier, uterine pregnancy taken for extra-uterine; Schlesinger, same; Depaul, extra-uterine pregnancy taken for a fibroid; Dolbeau and Charpentier, extra-uterine pregnancy taken for a retroverted pregnant uterus; Fournier, case misunderstood until the introduction of the finger into the uterine cavity; Martin, tubal pregnancy with hæmatocele, no diagnosis; Boinet, diagnosis halting between ovarian cyst and extra-uterine pregnancy; Hutchinson, similar; Orth, two cases taken for hæmatoceles; Leven, hæmatocele; Capuron, Parent, taken for anteversion; McCallum, tubal, recognized only at autopsy; Walther, pregnancy in a double uterus, sound entered the empty cavity: Jobert de Lamballe, abdominal pregnancy taken for an ovarian cyst or a uterine tumor; Bricheteau, ovarian cyst taken for an extra-uterine pregnancy.—*The American Journal of the Medical Sciences*, July, 1889.

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* Traité Pratique des Accouchements, 1883, t. i., p. 1044.

ORIGINAL ABSTRACTS.

By Kirkland Ruffin, M.D., Norfolk, Va.

Introduction to a Discussion on Placenta Prævia. By J. Braxton Hicks, M.D., F.R.C.P., F.R.S. (*From the British Medical Journal.*)

The author, because of the short time allowed for opening the discussion—only fifteen minutes—limited his remarks to the treatment. He thought that the early handling of these cases and the general antiseptic management of midwifery cases had much to do with the great reduction of mortality—from 30 to 5 per cent. in the last thirty years. He considers the following points well established: 1. When the placenta is inserted in the lower third of the uterus, there is very generally a liability to hæmorrhage. 2. When once hæmorrhage has declared itself, the patient's life is in imminent danger from recurrent bleedings. 3. The relative position of the placenta to the os has no influence on the frequency or quantity of the blood loss. The risk is the same whether the insertion be marginal or central. With these facts in mind, he advises, as a rule of practice, that, as soon as we ascertain the case to be one of placenta prævia, we should make arrangements for terminating the labor at the earliest possible date. As far as possible we should not leave our patient; certainly not to an indefinite future.

Having accepted this rule, how are we to accomplish this? We have two main points to consider; first, to prevent further bleeding; secondly, to overcome the resistance the substance of the placenta presents to the passage of the fœtus. But, also, we cannot leave out of consideration in the majority of these cases the state of anæmia caused by previous hæmorrhage. Of course, our manipulations should be as gentle as possible.

The bleeding can be stopped by pressure; either by the tampon; by the head being pressed down by the uterine efforts, or drawn down by the forceps; or by the leg and breech drawn down if presenting, or made to present by turning. The tampon, unless perfectly done, is useless; and, if perfectly done, is very painful, especially, if it has to be renewed, and, therefore, he advises against its use. But it has the advantage of dilating the os and inducing uterine action.

Uterine action alone will occasionally suffice to stay the bleeding, though it requires the head to be entering the os before it can efficiently do this; so that, if we found the os uteri fully dilated, the placenta marginal, the membranes tense, we might rupture the membranes, and if the head descended we should not expect further bleeding, and the case may be allowed to end naturally. If the placenta were mainly over the expanded os so that the head could not effectively enter, then it would be the best plan to push aside the flap of placenta, and apply forceps, and draw the head down, holding it there by gentle traction until the pains are sufficient to expel the head. If we had no forceps and the head is unable to enter the os, we must bring the breech down to the os by turning. This can be accomplished by either slowly pushing the hand through the os, seizing the leg, and bringing the breech into the os; or by the combined external and internal version which is much the gentler way. The hand should retain hold of the leg, so that the weight of the arm may give pressure sufficient to prevent further bleeding. In using the forceps as well as in turning, as soon as the os is plugged, the case should be left mainly to nature and only gentle traction made. If the os be not expanded enough to introduce forceps or readily turn, it can be dilated with dilating-bags or the fingers introduced one by one. But if the os be as small as that, probably version by the combined method would be best for the leg and thigh being conical, they would dilate the os, and, as the os expands, would keep up a corresponding pressure on the bleeding surface, and it has been constantly found that if slight traction be kept up at first, no further bleeding has recurred. If the placenta be attached more or less across the os, especially if it is small, it is of great advantage to separate it gently for a forefinger's length. If the membranes are intact, they need not be ruptured till the act of version.

The detachment of the placenta from around the os may be attended by continuous and severe hæmorrhage, particularly in central insertion of the placenta. After this detachment it is imperative that we should be in close attendance on the patient, ready to act should any bleeding of importance occur. We must also remember when we detach the placenta, we cut the fœtus off from its aëration to the same amount; this consideration does not enter in central insertion, for the placenta must sooner or later be attached to an extent probably fatal to the child. In order to lessen the bleeding on detaching the placenta, the finger should keep close to the uterine surface so as not to lacerate the placenta.

Version by combined internal and external method is especially valuable in cases in which the loss of blood has already been severe, and the os is very small, or when it is somewhat expanded and we have no forceps nor dilating-bags. But in selecting our plans for the safety of the mother, we cannot leave out of consideration the preservation of the child as far as possible; and, of course, all agree that delivery by the head is more likely to secure its safety when the os is fully expanded and the placenta marginal. But when the os is small and the placenta much across it, the additional risk from turning is scarcely to be taken into consideration. In all cases before the seventh month the question of saving the fœtus does not arise. In cases where the anæmia is profound, and the least movement eclipses the pulse, our difficulties are extreme. If there be no bleeding we had better wait and watch at the bedside in case it return, giving restoratives. Should it return after the patient has rallied, we may use forceps or version according to circumstances. As detatchment of the placenta is accompanied by more or less blood loss, the author advises against this method. As a conclusion, the author laid down these rules:

1. After diagnosis of placenta prævia is made, we should proceed as early as possible to terminate the pregnancy.
2. When once we have commenced to act we are to remain by our patient.
3. If the os be fully expanded and placenta marginal, we rupture the membranes and wait to see if the head is pushed by the pains into the os.
4. If there be any slowness or hesitation in this respect, then we employ forceps or version.
5. If the os is small and placenta more or less over it, the placenta is to be carefully detached from around the os; if no further bleeding occur we may wait an hour or two Should the os not expand, and if dilating bags are at hand, the os may be dilated If the forceps can be easily admitted, they may be used; but if not, version by combined external and internal method should be employed, and the os plugged by the leg or breech of the fœtus: after this is done the case may be left to Nature, with gentle assistance, as in footling and breech cases.
6. If the os be small, and if we have neither forceps nor dilating bags, the combined version should be resorted to, leaving the rest to Nature, gently assisted.
7. If during any of the above manœuvres sharp bleeding should come, it is best to turn by combined method in order to plug the os.
8. When the fœtus is dead, or labor occurs before the end of the seventh month, combined version is the best method, no force following.

Discussion.

Dr. Murphy submitted a table of thirty-eight cases with thirty-two consecutive recoveries, and only two deaths, one from septicæmia, and the other being in articulo mortis when seen. He urged the danger of allowing the pregnancy to continue and advised that labor should be induced immediately, if the placenta presented after the seventh month of pregnancy, and even before this if the bleedings were frequent or serious. He regards Barnes' bags as the best means of inducing labor and of dilating the cervix.

Dr. Lomer (Hamburg), wrote that he had treated twenty-eight cases of placenta prævia, with one case fatal to the mother. In Germany 190 cases had been treated by Braxton Hicks' method, with but nine deaths. His rule was to turn and wait; to consider the case simply as one of foot presentation. Should hæmorrhage occur, he made traction on the foot in order to tampon with the breech. This traction should not be a hastened extraction.

Dr. R. Barnes said that there was no constant method of treatment. The first thing was to lessen the bulk of the contents of the uterus, so as to admit of its contraction. 2. To detach placenta from the lower zone. 3. Dilate the cervix; this is best done with Barnes' bags. 4. According to conditions, deliver with forceps or bimanual turning. He thought an unhealthy endometrium was the cause, for the ovum seeks growth to a healthy endometrium. Therefore, for prophylaxis, heal the endometrium.

Dr. Harvey (Calcutta) wished to call attention to two points—the use of the forceps in suitable cases, and a danger in cases of initial rupture of the membranes. The practice, recommended by both Playfair and Barnes, of early rupture of the membranes often completely stopped the bleeding, but in some cases it failed, and the os being too small to allow turning it was necessary to plug. The plug might stop all outward bleeding, but the blood might accumulate in the uterus filling up the space formerly occupied by the liquor amnii.

Dr. More Madden thought the difficulties of treating placenta prævia greatly overrated. After using nearly every method, he has now returned to the old plan of stopping the hæmorrhage with the tampon, which brought on labor. He effected delivery by turning.

Dr. Murdock Cameron thought that marginal cases might be treated as advised by Dr. Hicks, but in central insertion he had always trusted to combined version and had seldom had any trouble about the dilatation of the os.

Dr. Walter (Manchester) had treated 23 cases—1 he had delivered with forceps, 19 by version, and 3 by the natural powers.

REPORT ON THE INTUBATION OF THE LARYNX. By F. E. Waxham, M.D. (*From the Journal of the Amer. Med. Assoc.*)

The author reports that intubation is still growing in favor. At the last meeting of the Association he had reported 150 cases coming under his observation, with 41 recoveries (27.33 per cent.). During the past year he had 28 recoveries (46.66 per cent.) out of 60 cases; making a total of 210 cases with 69 recoveries (32.85 per cent.). The operation had been used as a last resort, and in many cases after the patient has become moribund and unconscious. Of the sixty cases under his care in the last year, nineteen were treated with bichloride of mercury, both before and after operation, with nine recoveries (47.36 per cent.). Twenty-eight were treated with it only after operation with fourteen recoveries (50.00 per cent.). Thirteen had no bichloride at all, and five recovered (38.46 per cent.). He attributed his increased success during the last year to two factors—improved methods of feeding and greater experience, and better judgment in the management of the cases. The greatest objection ever raised to intubation was the difficulty of feeding the patient. This objection and the danger of broncho-pneumonia caused by the passage of food into the bronchi have been overcome by the adoption of the inclined position with the head down during feeding or when drinking. In this position, patients can swallow without difficulty.

A frequent cause of death is detachments of membrane and sudden suffocation from obstruction below the tube. To overcome this danger he has his tubes made with less swelling in the centre that they may be easily expelled. If it is ejected every few hours no harm is done provided the operator is at hand to replace it. Nothing is more dangerous in these cases than to insert a large tube that fits tightly and which cannot be expelled, and then leave our patient in fancied security.

DISCUSSION.

Dr. George W. Gay said that the statistics of the Boston City Hospital were slightly in favor of tracheotomy. Of 327 tracheotomies 95 recovered (29 per cent.); while of 223 intubations 47 recovered (21 per cent.). In some cases he found it impossible to introduce the tube. He though there was as much danger of death on the operator's hands as in tracheotomy. When stenosis is not relieved by the intubation tube, when swallowing is impossible, or when the tube is constantly coughed up, tracheotomy is indicated. In 32 such cases, tracheotomy saved 3 lives. There is no fixed treatment for croup except operation. He had used bichloride of mercury faithfully for two years and now is doubtful as to its effects. Feeding after either operation is most important. In intubation the patient should be fed lying on his side or back with the head low down. On the whole he thinks intubation is the better operation in ordinary cases.

Dr. Denison thought 60 or 70 per cent. of deaths after intubation the result of pulmonary complications. He had operated on 25 cases with 7 recoveries.

Dr. E. F. Brush had not had favorable results; had operated 23 times with only one recovery. He agreed with Dr. Gay that there was need of great care in introducing the tube.

Dr. J. A. Larrabee had only had experience with tracheotomy. Intubation was credited with being the easier operation, but that depended on personal experiences. He thought that a difference between diphtheria and croup should be insisted on. In the former we have the systematic infection to fight as well as the local trouble. In infants under two years of age, and in croup, intubation held the first place; for other cases tracheotomy was preferable.

THE INTRODUCTION OF A DISCUSSION ON FOODS FOR INVALIDS AND INFANTS. (From *The British Med. Jour.*) By I. Burney Geo, M.D., F. R. C. P.

The author in speaking of foods for invalids limited his remarks to those suitable for patients suffering from acute febrile diseases. We do not lack evidence, in the present day, that the indiscreet administration of food in acute diseases, food unsuitable in quality or quantity, is distinctly injurious. While freely granting the importance and necessity of administering a sufficiency of food to febrile cases, the author is convinced, especially in the large institutions, that the free administration of food and alcoholic stimulants is far too much a matter of routine. He pleads for more discrimination and less routine, and begs us to remember that food undigested only serves to intensify the febrile process, and that in giving condensed solutions of nitrogenous extraction we may incur the danger of adding to the already large accumulation of nitrogenous waste in the blood. He also suggests that possibly the cheap and common qualities of wines given patients in public institutions may do more harm than good.

We are undoubtedly right in feeding fever patients. Bauer and Künstle appear to have established that a due supply of albuminous food to a fever patient effects a saving of albumen in the body, for though the excretion of nitrogen is increased, the loss of the same element from the system is reduced. But do we not sometimes overfeed fever patients and use too little discrimination as to the kind of food?

He thinks we may formulate two chief rules to guide us in feeding cases of acute diseases: 1. Endeavor to use food to the greatest extent that is safe and possible for the purpose of checking the waste of tissue which is associated with the febrile process. 2. Be careful to give no food that cannot be readily absorbed and assimilated. Do not forget that the functions of the digestive organs are gravely impaired during fever. The author teaches that in acute and short typical febrile attacks, as in an ordinary attack of croupous pneumonia, we should not insist on the taking of much food, except in the aged and feeble.

All authorities agree that in fever we should give fluid food, in small quantities and at short intervals. The two kinds of fluid foods most commonly given are milk and beef tea. The great convenience of milk for a food has acted as a snare for them, is a tendency to think that no evil can come of that which is so handy. But the great drawback to milk as a food is that, though fluid outside of the body, it becomes solid in the stomach. No doubt it is an excellent food when it is well tolerated and quickly digested and absorbed; but such is not always the case. The author has seen several cases of typhoid fever in which milk produced marked intestinal irritation. One of the reasons why milk so often disagrees is that it is given too concentrated and in too large doses. Why should we hesitate to mix the milk with water? Fever patients need water and in much larger quantities than they usually get it. Their digestive organs are weakened yet we give them concentrated foods! When milk is digested with difficulty, the author mixes it with an alkaline water, or to hospital patients adds twenty grains each of bicarbonate of soda and common salt to a pint of milk and orders the milk to be mixed with an equal amount of water before given to the patient. Greater use should be made of whey when milk is badly digested. It can be prepared in a pleasant form by boiling a pint of milk with two or three teaspoonfuls of lemon juice, and a few fragments of lemon peel for flavor; break up the curd well and strain through muslin. Buttermilk is also sometimes useful and easily digested.

The term beef-tea is usually applied to strong extracts of beef and it is generally estimated in exact proportion to its concentration. If a fever patient needs water, why not give some in his beef-tea? Many patients dislike beef-tea entirely because of its concentration. There are many kinds of meat inferior or extracts better suited for the diet of fever patients than strong beef-tea. But clear soups—consommés—are very agreeable, readily absorbable and stimulating foods.

We are also too apt to leave out all vegetables juices. Beef-tea and milk are very useful, but there is no reason why we should limit a patient to these, and in a concentrated form.

FOOD FOR INFANTS.

The author speaks of the tendency of mothers not to suckle their offspring. We then fall back on the wet-nurse. Too often is the wet-nurse over-fed and given ale or porter and then allowed to take too little exercise. As a result the milk becomes too rich and disagrees with the child. Farinaceous food should not be given a child before the fourth and better not until the seventh or eighth month. Then any of the malted foods may be given. Between the tenth and twelfth months breast feeding may be gradually stopped, but milk should form the main article of diet until the eighteenth month.

The chief difficulty in supplying a substitute for human milk appears to depend not so much on differences in the quality of the different constitutents, but on differences in quality, especially in the quality of the albuminate. Human milk varies in composition between wide limits in different periods of lactation and under different circumstances. The most important difference between cow's milk and human milk is that the nitrogenous substances are differently effected by coagulating agents. Artificial foods should, like human milk, clot in fine flakes. Cow's milk therefore must be modified in its chemical composition and physical properties to make it a fit substitute for human milk. To do this we (1) dilute it with water to bring down the proportion of casein, (2) cold cream to bring up the proportion of fat, and (3) add sugar of milk to bring up the proportion of sugar. Sugar of milk is generally recommended on the ground that cane sugar causes a tendency to fermentation. To prevent the formation of indigestible curds, two methods have been recommended; one to add an alkali, such as lime water or carbonate of soda; the other to add some mucilaginous substance, as barley jelly, gelatin, etc. Opinion varies as to the advisability of using condensed milk; the babies fed on it are generally large and fat but not strong and, according to Dr. Louis Starr, have little power to resist disease. Predigested foods—partially peptonized foods—are useful in some troublesome cases but should not be used for too long a time, as the digestive organs need exercise for proper development.

CLINICAL RECORDS.

THE TREATMENT OF SOME FORMS OF CHRONIC SUPPURATING KIDNEYS BY PERINEAL PUNCTURE AND DRAINAGE. By Reginald Harrison, F.R.C.S., Surgeon to St. Peter's Hospital, London.

In connection with cases of obstructive urethral disorders in adult and elderly males, instances frequently occur where the backward pressure of the urine leads not only to dilatation of the ureters and kidneys but to extensive suppurations of these parts. In a certain proportion of these the removal of the obstruction in the urethra by systematic dilatation or otherwise is followed by a gradual improvement in the condition of the parts above the constriction, and the complete disorganization of the kidneys is thus averted. In others, on the other hand, the dilated and suppurative condition of the kidneys is so far advanced that, though the calibre of the urethra may be artifically restored to its normal size, pus continues to be poured into the urine tract from above in considerable quantities. It is now some years since my attention was first directed to this class of cases where death occurred in the course of time, not because surgery had failed to dilate the stricture, or to provide against the obstruction caused by a large prostate, but by reason of the kidneys being gradually converted into chronic abscesses, and the ureters into suppurating sinuses. It seemed to me that by a more dependent and continuous process of drainage than any form of catheterism could provide, it would be possible at very little risk to save what remained sound of the secreting structure of the kidney, and thus to prolong life and materially add to the comfort of patients so circumstanced. The misery that persons endure who are voiding several ounces of pus daily from their kidneys in getting rid of the dregs which thus accumulate in their bladders is often very great. The surgery of the kidneys has not done much to remedy those chronic forms of nephritis where the suppuration proceeds from both organs, as we see in advanced cases of prostatic obstruction, urethral stricture, and in certain varieties of suppuration associated with renal tuberculosis. In some unilateral suppurations of the kidney, nephrotomy has proved of great value, as I have illustrated in a previous communication,* but such a proceeding is clearly not applicable to those instances where both organs are similarly involved. A case that has been under my observation for some years was that of a gentleman æt. 34 years, who came to me early in 1884 with a stricture of considerable standing, the result of gonorrhœa. His urine contained a large amount of pus. I regarded the case as one of suppuration from the parts above the stricture, and concluded that, by careful attention to the latter, with washing out the bladder, improvement would gradually follow. In the course of a few months' treatment, he so far improved as to be able to go abroad again, with the understanding that he was to continue the use of a full-sized bougie. In 1886 he returned to me with all his symptoms much aggravated. His stricture has been neglected, and consequent on this the urine became largely charged with pus. At times there was some hæmaturia, and the urine contained much mucus, and shreds of what proved to be broken-down kidney tissue. The specific gravity of the urine varied between 1010 and 1017; it was usually acid, and of average quantity. It was tolerably evident, therefore, that though the kidneys were the chief source of suppuration they were neither irrevocably nor completely damaged. Every care was paid to the urethra again, and the bladder was injected in various ways, but without any good so far as the pus, hæmaturia, or irritability was concerned. This determined me to drain the suppurating parts, and accordingly, in 1888, I punctured the perineum and put a large drainage-tube into the bladder. He was drained in bed for six weeks with great advantage, the pus in the urine diminishing in quantity and the symptoms of hectic subsiding. Then he got up and learnt to draw off his urine and pus by the perineal opening, through which he also used to wash out the bladder. In the course of six months the urine became clear, and the perineal wound slowly closed. I should add that when I opened the perineum I explored the bladder with my finger and found it healthy, and there could be no doubt from our experience with the drainage-tubes in this instance, that the whole of the pus was derived from the kidneys. The patient has again gone abroad to a trying climate, and I have since heard that he is in excellent health.

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* Liverpool Medico-Chirurgical Journal, Jan., 1889.

I have now operated in about ten cases of what I take to be chronic suppurative pyelitis, involving both kidneys, cases where, had only one organ been involved, I might perhaps have reached it from the corresponding loin. I have also seen several others in the course of my practice where perineal cystotomy had been performed by other surgeons, presumably for exploration of the bladder or for chronic cystitis, where the perineal wound had failed to heal. These, I believe, were for the most part instances of suppurating kidneys. And I base this conclusion not only upon the general symptoms presented in each instance, but from an observation which I have frequently made in my own cases to the effect that when drainage has rendered the urine normal and free from pus, it is almost impossible to prevent a properly made perineal wound closing on the drainage-tube being withdrawn, whereas when the urine remains loaded with pus, as we have in suppurating kidneys, it is absolutely impossible to bring about repair, and a permanent fistula results. It is now some years since I opened the bladder from the perineum and put in a drainage-tube in a case where the urine was largely charged with pus; but I was not able to discover the source of the suppuration. The patient was much relieved, though many ounces of pus were daily evacuated in this manner. After passing from my observation the tube was removed, and attempts were made to close the perineal opening. These, I learnt, were not successful, and it was necessary to return to the use of the drainage-tube. Eventually the patient died of exhaustion, when it was found that a psoas abscess had opened into a ureter. Though this circumstance was not discovered until after death, the means that were adopted, by providing an easy mode of escape for the pus, not only prolonged the life of the patient, but added materially to his comfort.

It will not be necessary for me to bring forward in detail further illustrations of perineal drainage in the case of suppurating kidneys. There are, however, two or three points which I may thus summarize in reference to what I have observed.

1. That in the larger number of cases of simple suppurating pyelitis caused by obstruction below, the pus gradually and completely disappears as a resistance to the urine is removed. This is exemplified in the ordinary treatment of urethral stricture by dilatation or otherwise.

2. That some advanced forms of chronic double suppurative pyelitis from obstruction below, where the suppuration continues to be excessive after the obstruction has been relieved or removed, are best treated by an opening in the perineum where the drainage is free and dependent, and irrigation can be conveniently employed.

3. That perineal puncture, as I have elsewhere described it,* best meets the requirements of these cases, and may be said to be free from risk.

Such an operation entails no prolonged confinement in bed. I have had patients upon whom perineal puncture has been practised for urine drainage up and about within ten days of the performance of the operation by the use of a very simple contrivance. It consists of a soft rubber drainage-tube for retention in the bladder by a T-bandage, to which is attached a continuation-tube fitted with a stopcock, the end being retained by a belt round the patient's waist. When the patient desires to empty the bladder, he has nothing to do but to turn the stopcock and let down the tubing either between his legs or into a suitable receptacle. I first applied this method of draining the bladder, whilst the patient was allowed to go about, in a case I recorded† where the bladder was punctured through the prostate. The tube was worn for six weeks, and the patient, although eighty-six years of age, made a complete recovery, the prostate so shrinking in size as to permit again of normal micturition. He lived for several years afterwards without any further necessity to use the catheter. Professor Annandale has since drawn my attention to a somewhat similar contrivance, which I understand he has found extremely useful, and which I am now using. If the perineal wound is made tolerably accurately, there need be no leakage by the side of the tube. Patients may in this way be going about for some weeks until the state of the bladder or the urine shows that drainage may be discontinued and the perineal wound allowed to close, which it usually does rapidly.

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* Lectures on the Surgical Disorders of the Urinary Organs, 3d edit.

† Brit. Med. Jour., Dec. 24, 1881, and April 8, 1882.

For use at the time of operation and whilst the patient remains in bed, I have been recently employing the ebonite drainage-tubes recommended by Dr. F. S. Watson, of Boston, U.S.A.* They are provided with a movable collar by which they can be accurately adapted to the depth of the perineum, and are made in different sizes and lengths. They will be found very cleanly and unirritating.

The results of this method of treatment, so far as the kidneys are concerned, are almost entirely dependent upon the conditions present. Where the kidneys are little else than suppurating sacs with but a small amount of secreting tissue left, I have known persons go on for many months with great comfort, discharging their pus through a well-fitted drainage-tube instead of through the urethra. I have now a patient who is quite comfortable so long as he wears his tube arrangement, but as soon as it is withdrawn he gets uneasy, the urine becomes offensive and he has high temperature from imperfect drainage. Others, again, use the perineal opening as a convenient way for passing in their catheter tube at intervals to draw off urine and pus and for washing out the bladder, if this is necessary. I am occasionally seeing a patient upon whom I thus operated nine months ago for suppurating kidneys, resulting from an old stricture, who, though an invalid, draws off a residuum of one or two ounces of purulent urine daily with far greater comfort than he previously voided it through his penis. Lastly, we have the satisfaction of meeting with instances such as the one I have more fully recorded where the drainage process is attended with complete success. Evidence is here afforded that even suppurating kidneys when not too far advanced may be made amenable to the application of the well recognized surgical principles in the treatment of chronic suppurations—namely, a dependent opening and thorough drainage.

A CASE OF PERSISTENT HÆMATURIA ; TREATMENT ; CURE. By G. Stevens Pope, L. R. C. P. & S. Edin., etc., Assistant Medical Officer, The Friends' Retreat, York.

The following case of hæmaturia, apart from its being accompanied by some obscure symptoms, was so persistent (lasting, in spite of treatment, for over two years and a half), so continuous, and moreover marked, considering the constant drain on the system, by such slight constitutional disturbance, that it may be well to record it, with the treatment, which was happily successful.

John Henry W——, æt. 24 years, a well-developed, moderately well nourished man, with a curious expression of anxiety on his face, consulted me on March 29th of this year for an affection of the kidneys, and intelligently brought a specimem of his urine with him. On inspection, there was unmistakable admixture of blood with the urine, which had been passed, more or less, in this condition, for over two years.

Previous history and symptoms.—The present attack began in the latter end of October, 1886, The onset was sudden, and was ushered in by weakness, sense of fatigue on the least exertion, chilliness, loss of appetite, severe burning pain in the soles of his feet, cramp in the toes, and twitching of the muscles of his limbs. He did not lay up, but was under orthodox medical care. That night, for the first time, on micturating, he noticed his urine to be deeply colored, and was much alarmed. The bowels were also constipated. There was no swelling of the feet, no pain in the lumbar region, no feverishness, and no evidence of an acute renal attack. He remained under care, but after six months, there being no improvement in his urine, he gave up seeing his medical attendant. He became much depressed in mind, insomuch that he contemplated self-destruction. He then gave way to intemperance; this, strange to say, did not materially influence his condition. He was better in warm weather than cold. In May, 1887, he again sought advice, as he was weaker, suffered from constipation, and was losing weight. He was under care for three months, but never at any time did his urine resume its normal color. Being "in himself" better, he left off going to see his medical man. In August, 1887, he was under care again, and, though his general health was improved, the hæmaturia was persistent. Off and on during the following year he consulted various surgeons. In January, 1889, he was again under treatment for five weeks, and during this time he had more than once a slight improvement in his urine, lasting for a day and a half occasionally, He felt more or less always fatigued, even after a night's rest.

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* Operative Treatment of the Hypertrophied Prostate, 1888.

Condition on examination.—Physically he seemed a healthy man, and there were no indications of organic mischief, and though I expected that there would be present signs of anæmia from the constant loss of blood, these could not be made out. His weight was 149 pounds. He compained of slight but ever-present sense of fatigue, anorexia, and persistent constipation (his bowels often being moved only once in four days). His urine was about normal in quantity, and was passed uniformly bloody in color. There was no discomfort or inconvenience in any way associated with his urinary apparatus, beyond the fact that he was conscious of a constant loss of valuable material, and this depressed him in mind. The produced specimen settled down on standing, and, roughly, one-fifth of its bulk consisted of a flocculent, bloody deposit. Sp. gr. 1024; acid; no sugar; supernatant layer gave a faint trace of albumen. Microscopically, there were no casts to be seen, but the urine appeared one mass of well-preserved, distinctly-defined red blood-cells, with here and there leucocytes. There was no tendency to disintegration. Hæmatin crystals were looked for, but were absent. Pulse 62, somewhat full and hard. Temperature 98. 2°; tongue coated; bowels constipated.

Diagnosis.—The ordinary signs of acute or subacute kidney mischief were absent; there was no pain or discomfort in the lumbar region, precluding inflammation, active congestion, calculus, etc. There was no evidence of a parasitic origin for the mischief. I therefore made up my mind that the hæmaturia was not symptomatic, so to speak, but in itself the result of some functional failure of the kidney.

Treatment.—The patient was therefore ordered as complete rest as possible, abstention from alcohol, and, indeed, as limited a fluid supply as possible, warm baths, and, on March 29th, five grains of lead and opium pill, with an ounce of infusion of matico, three times a day. The urine, however, became somewhat worse, so this was discontinued. April, 1st: Two drachms of compound tincture of cinchona were given three times a day (after Sir Wm. Gull). Improvement for several days, but relapsed again.—10th: Liquid extract of ergot. Urine markedly worse.—15th: Supposing that possibly the blood was in some way altered or impoverished, and that this maintained the condition, iron and arsenic were given. Slight improvement for a few days. Discontinued on May 7th.—May 12th: Liquid extract of cascara sagrada, half a drachm night and morning, was ordered for the constipation. This, while regulating the bowels caused an improvement in the urine, which was maintained, but never got beyond a certain degree.—20th: Taking into consideration the marked ill effect of liquid extract of ergot, coupled with the fact that in summer the patient was somewhat improved, I now concluded that here there was some altered condition of blood-pressure, in all probability marked increase, which caused the red-blood cells to be forced through the minute vessel walls into the secreting tubes, thence to be excreted, and therefore an effort was made to diminish this increased pressure. The bowels being regulated relieved the general congestion of the abdominal viscera, and now the patient was ordered two vapor baths a week. These were regularly taken.—27th: Patient feels better, and says he has more life in him. Urine much improved.—June 1st: The improvement in health and general spirits is marked. Urine clear, but in the lower one-fifth of the vessel there is a pinkish, flocculent mucous deposit. With the tincture or guaiacum and ozonic ether test the presence of blood can be demonstrated.—8th: Specific gravity of urine 1020; acid; no visible deposits; no indication of blood either chemically or microscopically. This is the first time since the present attack.—15th: Urine normal.—22nd: Urine normal; phosphatic deposits. The duration of hæmaturia from first to last has been a little over two years, seven months, and ten days.—August 14th: I saw the patient to-day. Says he never felt better in his life; is in excellent health and spirits. There has been no relapse, and his urine is still normal.

PROCEEDINGS OF SOCIETIES.

NEW YORK NEUROLOGICAL SOCIETY.

Meetings of November 5 *and December* 3, 1889.

The President, George W. Jacoby, M.D., in the Chair.

In March, 1887, a commission consisting of Dr. E. C. Seguin, Chairman, Dr. M. A. Starr, Secretary, and Dr. W. R. Birdsall, together with two ophthalmologists, Drs. W. O. Moore and David Webster, and two other gentlemen nominated by Dr. Stevens, viz., Drs. C. L. Dana and Frank P. Foster, was appointed by the Society to investigate, in conjunction with Dr. G. T. Stevens, the treatment of ocular irritations as a therapeutic measure in certain neuroses. This commission presented its report on the

TREATMENT OF EPILEPSY AND CHOREA BY THE CORRECTION OF OCULAR DEFECTS,

in November, the discussion being concluded at the December meeting. Immediately preceding the reading of the report the following protest was presented by Dr. G. T. Stevens:

"Mr. President and Gentlemen of the Neurological Society: I respectfully protest against the reception of the report now announced for these reasons: 1. That the commission, having failed to perform its part of the agreement upon which the report is to be founded, the report is not now in good order; 2. Because the report is not a report on the proposition at issue; 3. Because the report is inconsistent with the facts and is misleading; and, 4. Because it is an *ex parte* report and objectionable in spirit and motive."

The President then called for the report of the commission, which was read by its chairman, Dr. E. C. Seguin. The more important features of this report were as follows:

After a plan of proceedings had been agreed upon between the commission and Dr. Stevens, the members began to send patients to the latter in April, 1887.

Each patient was examined by two neurologists, who agreed upon the diagnosis and compiled a history of the case. The patient was then sent with the history to Dr. Stevens, who examined the ocular conditions. Subsequently, the ophthalmologists of the commission examined the eyes and reported their results to the secretary, who added these notes to the copy of the history in his possession. When an operation was undertaken notice of it was sent by Dr. Stevens to the secretary, who, in turn, notified the ophthalmological members and also the neurologist who had furnished the patient. These members then attended the operation and noticed the conditions found in the eyes before and after it, sending their records to the secretary. Their non-attendance, however, did not prevent operations from being done, and the records of these operations, as well as records regarding prisms and glasses prescribed by Dr. Stevens for the patient, the commission had been unable to obtain from him.

The patients from time to time visited the members of the commission by whom they were sent to Dr. Stevens, and notes of the conditions found were made and sent to the secretary. In the cases of epilepsy the record of attacks had not in all cases been kept in duplicate, Dr. Stevens having the record on the blanks furnished by the commission, and in these cases the records had not been accessible.

The total number of patients examined by the commission and sent to Dr. Stevens for examination was 28; 23 epileptics and 5 cases of chronic chorea.

All were found to have ocular insufficiencies; 5 were withdrawn without treatment; 3 a month after examination; 1 two months after; 1 three months after; 2 four months after; 1 five months after.

The reasons for withdrawal were as follows: 5 were unable to attend regularly; 2 were declined by Dr. Stevens on the ground of organic disease; 5 were withdrawn by mutual consent of member sending case and Dr. Stevens for satisfactory reasons, such as non-attendance; 3 were discontented because of increase of symptoms.

Hence, of the 28 cases there were only 14 who were treated for four months or over, and these were the only ones available for conclusions. These cases were tabulated, and the results summarized thus:

	Cured.	Much Improved.	Improved.	Unimproved.	Unknown.	Total.
Chorea - - -	None	1	2	2	0	5
Epilepsy- - -	"	None	3	5	1	9
Total.	None	1	5	7	1	14

Of the six improved cases three had been presented to the commission by Dr. Stevens from his private practice, with no exact data, and the degree of improvement could not be ascertained. In the other three reported as improved, in one improvement began after thirty weeks, and the patient had never been entirely free from chorea for one month; she had at times been better under the ocular treatment, at times worse, even now having choreic movements, usually before menstruation. In another the chorea was only slightly less than at the outset. The sixth case, an epileptic, was having about the same number of attacks as she had had under bromide treatment, but far less than when under no treatment whatever.

Regarding those not improved, many of the patients would say they felt better, in spite of the written records proving the increased frequency of the attacks. This was in part due to increased hope and confidence in the success of the treatment, and also to the freedom from depression of mind and bodily functions produced formerly by the use of the bromides. Others had complained much of headache and vertigo which had appeared during the treatment, and in several diplopia had been produced and still remained. A few of the patients had been made exceedingly miserable by great increase in the frequency and severity of the attacks, which had finally necessitated an abandonment of the ocular treatment and a return to drugs. This statement applied to a number of cases which had been withdrawn.

It would be noticed that none of the cases having been cured, all remained indefinitely under treatment, a perfect permanent ocular equilibrium not having been secured in any case. If it were impossible to secure such equilibrium, a cure could not be expected, granting the theory of Dr. Stevens. If it were possible to secure such equilibrium, it was to be supposed that it could be secured in at least two years; yet four of these cases had been under constant treatment for two and a half years without this result.

In conclusion the committee expressed the opinion that as far as this investigation had warranted a conclusion, the method of Dr. Stevens does not afford a sufficient degree of relief to patients suffering from chorea and epilepsy to warrant its adoption or recommendation to the members of the Neurological Society as a means of cure or as the sole therapeutic measure in such cases.

Dr. Stevens then read a reply to the report of the commission, of which only the outline can be reproduced here. He said that whatever might have been the original condition of the majority of the cases sent to him during the first year, they had long ceased to be cases of functional disease. While, as a matter of fact, all of the patients were incurable with any of the ordinary methods of treatment, and while they had grown worse under such treatment continued during many years, they had in every instance, under his treatment, materially improved in general health and in the diseases for which they were treated. All this improvement had been brought about without recourse to the depressing effects of bromides or the toxic effects of enormous doses of arsenic.

The commission, according to Dr. Stevens, entered upon its work in a manner entirely inconsistent with the true spirit of inquiry. It pursued it in a manner calculated to induce vexation, misunderstanding and controversy. It occupied many months in securing a few cases, and has never yet complied with its own stipulations. It has through more than two years been occupied in selecting the most unfavorable cases for treatment, and has taken the favorable cases to itself. The spirit of the report is calculated to produce prejudice and to mislead, and the report was made in violation of every principle of right or fairness. The report is represented as an investigation of two diseases, and not of a principle, in direct violation of the pledges of the commission. The commission repeatedly sent cases well known to be unsuitable for the inquiry and contrary to the articles of agreement and the private promises of members, and in this report paraded these cases in long detail with the effect of misleading the judgment of those unacquainted with the facts. It reported the results of treatment of the cases by minimizing the importance of the malady at the beginning of treatment and by magnifying the unfavorable conditions now existing. The results represented are not in conformity with the actual facts, but are grossly at variance with them. It reported as resulting from treatment unfavorable ocular conditions which do not exist, and in this respect made mistakes which should have been avoided.

In the discussion which followed, Dr. Hammond said that he had seen eight of the cases described, the day before the meeting. The patients and their friends all admitted that the cases had been improved very much by Dr. Stevens's treatment, a fact which was at great variance with the statements made by the same patients to the commission.

Dr. Seguin said that that part of Dr. Stevens's remarks which reflected upon the fairness and integrity of the commission needed no reply, the names of the members of the commission being a sufficient answer. Dr. Stevens's statement as to the evil effects of the arsenical treatment of chorea and of the bromides in epilepsy were altogether unwarranted by fact.

It was true that the commission had the greatest difficulty in inducing patients to undergo the treatment, but their failure to obtain twelve cases within the first few weeks was not through neglect or violation of the agreement. It was simply an impossibility to supply the necessary material in a given time—enough had been furnished in all. Dr. Stevens, in not furnishing data as to the course and progress of the cases, had violated the compact.

As far as his own cases were concerned, one had been nearly killed by the ocular treatment, which involved the omission of bromides. Another had been under ocular treatment for fifty-two weeks before improvement became marked. Another, a girl with chorea, showed no tangible improvement until after the lapse of seven months. His own experience in cases of chronic chorea, even when of five to seven years' duration, was that they were not merely improved very soon under arsenical treatment with rest in bed, but, as a rule, cured in from two to three months This girl, though improved under the ocular treatment, had now transient diplopia for far and near, while the second case alluded to saw double on looking to the right. The improvement in these cases (which were the best of the series) could not, therefore, be ascribed to the ocular treatment, but was to be attributed to improved health and time. Dr. Stevens had reported fifty per cent. of *cures* of epilepsy in his own (former) series of cases, but in the cases examined by the commission there was not one. Moreover, he had reported his cures taking place in a few weeks after beginning the ocular treatment, while in these cases, where improvement of any kind had taken place, many months had been required before decided change had been manifested.

Dr. Starr, in regard to the remarks made by Dr. Hammond, referred to the records of the cases already read to the Society, which demonstrated in each case an increase in the number of attacks, in some of them to three times as many as formerly.

In one case, pronounced by Dr. Webster as normal ophthalmologically, and in every respect a purely functional case, Dr. Stevens claimed to have found optic atrophy, and called it an organic disease.

Dr. Birdsall had seen one of the epileptics mentioned by Dr. Hammond as having reported improvement to him, and whose sister corroborated the patient's statement. He had asked the sister why she had made this statement. She had replied that she did not refer to the number of fits, which was unchanged, but meant that the patient seemed to be brighter without the bromides. The record showed, however, that the number of attacks had increased, and that the patient was in reality much worse under Dr. Stevens's treatment.

Dr. Dana said he had been appointed on the commission by Dr. Stevens himself, and felt that he represented him in a measure, but naturally his chief object had been to obtain the exact truth in the matter. He had sent twelve cases of his own to Dr. Stevens, and had tried hard to get others to go; but he had seen no case much improved under Dr. Stevens's treatment.

Dr. Stevens said that when the investigation was commenced cases were accepted by the commission which ought never to have been taken. One was a pronouncedly organic case; and, in fact, not one of the cases was functional. The operative technique is exceedingly delicate and difficult, and such great skill is required that he himself did not yet claim to have attained perfection; but the more skillful the operator becomes, the more valuable will prove to be this therapeutic measure.

Dr. L. C. Gray did not believe that Dr. Stevens had substantiated his serious charges against the commission or caused any particular improvement in the cases. Esquirol showed in 1828 that temporary improvement took place in all cases of chronic epilepsy in La Salpêtrière when treated by drugs known at that day. A decrease of from six to three fits daily could not be considered a permanent improvement, because such decrease was often spontaneous, and in some cases fits spontaneously ceased for years. He agreed with Dr. Seguin that where improvement did not begin before fifty-two weeks after treatment had been begun, any improvement that might take place could not fairly be ascribed to the measure employed.

Dr. Seguin said, with reference to the work done by Dr. Stevens, that all of the members of the commision had appreciated it highly, and had felt like adding something commendatory of his skill to the report, but refrained from doing so because, under the circumstances, it might have appeared hypercritical, and was really alien to the subject assigned to the commision, viz., the determination of results.

Dr. J. L. Corning thought that Dr. Dana's tribute to the good work done by Dr. Stevens was in exceedingly good taste. Dr. Stevens's work was unusually scientific and original, and there seemed to be very little of that sort of work done in New York, where compilation and the importation of foreign ideas were the order of the day. Hence, this discovery of Dr. Stevens ought to meet with wide recognition.

A motion to adopt the report of the commission was then carried by a vote of five to four out of the eighteen members present, the members of the commission refraining from casting their votes.

The following motion, made by Dr. Amidon, was unanimously carried:

"That the thanks of the Society be extended to Dr. Stevens for the assiduous labor he has devoted to the work of the commission, and that the Society assure Dr. Stevens that it highly appreciates the ingenuity and technical skill he has shown in the prosecution of his method."

SANITARY.

HEREDITY IN DISEASE. By John Schilling, M.D.

A healthly and vigorous bodily constitution is one where the tissues, and consequently the functions, are normal. The constitution is broken down, impaired, diseased, below par, when the tissues are abnormally changed. This takes place, firstly, as the result of too much or too little functional activity—viz., over or non-use of the tissues, or exposure to cold, heat, and fatigue, or inadequate construction material—viz., want of food, bad food, or abuses in the ingestion of alcohol, opium, etc. Secondly, infective disease, such as tuberculosis, syphilis, and, indeed, all acute diseases, leave the tissues in a somewhat impaired condition; and although health may be re-established it is never quite so perfect again as it was before the attack of illness.

There is a general principle in nature that the offspring resembles the parent to a certain degree. A constitution is inherited, we say. Two healthy parents have sound and healthy offspring. Of course there are exceptions to this. If during gestation a healthy woman is subjected to an injury or suffers from inanition, etc., it will influence her blood, hence the food-supply of the fœtus, and thus cause some abnormal development in the form, organs or tissues of the fœtus.

If, on the other hand, the parents' constitution is impaired, broken-down, the sperm and germ cell and the subsequent fœtus suffer proportionately. This broken-down constitution may have all degrees. The destructive process may have gone so far that the parents are completely sterile. It may have gone only so far that the ovum perishes after two months' gestation. Or the fœtus may die at six months or at full term. Or the child may be born alive, but too lowly organized to live long, or, lastly, the offspring may be but little short of perfect health. We can well understand that the viability and vigor of the child depends upon the condition of the parents' health during the process of its formation. It is evident, too, that the child has lower vitality if both parents have been constitutionally below par than if either one alone. Now it does not matter what caused the broken-down parental constitution, whether tuberculosis, syphilis, exposure or insufficiency of food; this condition of dissolution of the tissues and of defective organization is stamped upon the germ and sperm-cell, so to speak, and grows with the being originating from these—"it is inherited by the offspring." This inherited constitution has been called, variously, scrofulosis, cachexia, marasmus, etc.; but let me say here that all these names mean essentially the same defect, differing only in degree, and this again depends upon the extent of the parental disease which caused the imperfection of the fœtus. Thus, also, a diathesis means but a lesser defect in the organism or a lesser resisting power of the tissues to disease processes, to injuries, and to the inroads of bacteria. So that no particular disease is inheritable as such—not even insanity. For instance, a mother has a local defect—a cicatrix or an old cavity in her lung, the remains of an arrested process of tuberculosis; her vital powers have been lessened during the active stage of the affection; her tissues are no more quite perfect; the ovaries and the germ-cells have shared likewise in this process of dissolution. But there are no more bacilli in the blood or in the tissues at large, neither in the germ-cells. Besides, how can the bacilli enter the minute germ or sperm-cells before fecundation so as to make them tuberculous, syphilitic, etc.? This would surely cause their destruction—at least their sterility. Now, the child developed out of them has the same tissue-organization, the same weak vitality or lessened resistance to processes of disease. If it be injured by a fall, by cold, or by a blow, the respective tissues will undergo destruction sooner and more readily, the more pronounced this diathesis or systematic weakness is. If the child is then exposed to bacteria—and where is not one exposed to these fiends?—they will immediately take hold on these weak spots and aid materially in the destructive process. And according as these microbes are bacilli of tuberculosis or of syphilis, or of osteomyelitis, etc., the established disease will be one of tuberculosis, syphilis, or osteomyelitis. Therefore the assertion that the offspring inherits a liability to a certain disease—a diathesis—is wrong. They inherit simply a liability to any disease, not to that one alone which their progenitors have. The inherited lower vitality, imperfect development, defective tissue-organization, is liable to succumb to the ravages of any disease-germs. That, however, the children mostly possess the same disease as their parents, is self-evident from the fact that they are mostly exposed to that disease. They are, later on, infected by actual contact, as a kiss, or by inhaling infected air.

Finally, there is one event which usually takes place together with inheritance, and which has been mostly confounded with it, and that is transmission of a disease from mother to child in utero. But that is not heredity at all; that is really infection. And by that any particular disease is transmissible as such. So a tuberculous or a syphilitic mother, will have a tuberculous or a syphilitic child. The respective bacilli swarming in the placental blood can enter the fœtal circulation or tissues.

Insanity is likewise not inheritable as such, although it is claimed to be so. An imperfect arrangement of the nervous centres, destruction of the nerve-tissues, nerve-fibres, or cells by tubercles, gummata, circumscribed tumors, narrowing of the axis-cylinder, lack of inter-central connections, compression of the cells, atrophies, sclerosis, etc., similar to the defective organization of any other tissue in the human body, are inherited by the offspring. And if to such conditions, which make the individual already hypersensitive and hyperconvulsive, the exciting cause be added, there will be an outbreak of emotional insanity.

In conclusion, let us recapitulate the following points:

First—heredity of an impaired constitution. A diathesis to all diseases, not to a particular one, is inherited if the parental constitution is broken down by infectious or non-infectious processes, by diseases or other injurious circumstances. In this case the mother must be free from infection, or the latter must be at least quite local, as a small tuberculous area in a lung, for instance. So far we can speak of inheritance.

Secondly.—If the mother is still infected the respective disease is transmitted to the fœtus in the regular manner of infection. *A priori*, it is evident a disease is hardly ever or never inherited as such, but is always acquired; although an inherited diathesis is sometimes so severe as to be itself called a disease.—*Weekly Medical Review.*

PHARMACY AND THERAPEUTICS.

INTERNAL EMPLOYMENT OF RESORCIN IN WHOOPING COUGH.—A new method of treatment of whooping cough, recently recommended by Dr. Concetti, consists in the internal administration of resorcin, since he has found the method recommended by numerous authorities as to the local application of the drug in children prove, in most cases, totally impracticable. He claims that his results have fulfilled his expectations, and although he does not regard resorcin as an actual specific against whooping cough, nevertheless he believes that it is a valuable remedy, preferable to any other in the treatment of this affection.

The number of cases in which the author has employed resorcin for whooping cough amounted to forty-eight, among whom was a nursing infant of only twenty days of age. The daily dose varied according to the age, ordinarily 7½ to 22 grains, dissolved in a considerable quantity of water, being given. The doses were given from one to two hours apart, according to the intensity of the case. In thirty-four cases the affection occurred in its typical form, with repeated spasms of coughing, accompanied by the characteristic whoop. In twelve of these treatment was commenced in the catarrhal stage before the characteristic sound appeared. The whoop subsequently appeared, but only for a few days (from six to fifteen); it was by no means severe, and the attacks occurred but seldom. In the other twenty-two cases treatment commenced in the second stage, which, in some cases, had already lasted a week or more. In these latter cases the action of resorcin was most evident, since the attacks rapidly diminished both in intensity and frequency, while other methods of treatment which had hitherto been employed in the same cases remained absolutely without effect.

The author likewise states that the duration of the disease was positively shortened, some cases lasting but one week, others two, or, more seldom, three weeks; in the latter cases leaving a light catarrh, which readily yielded to ordinary remedies. In the other fourteen cases the characteristic whoop was absent, and here also treatment was commenced in the catarrhal stage, and the author believes that the development of whooping cough was prevented. Among these cases was a woman, and, as is well known, the whoop is frequently absent, even in indisputable cases of whooping cough, in adults. Further, the author claims that in numerous cases he thinks he is able to conclude that of nineteen cases in which the treatment was commenced in the catarrhal stage, that it was aborted in six, and in thirteen rendered mild and of short duration. Dr. Concetti suggests that perhaps the results obtained by Moncorvo and others from the local application of resorcin in whooping cough was to be attributed to the amount of the drug which had been swallowed.—*Wiener Medizinische Blätter* for Sept. 5, 1889.

THE PHYSIOLOGICAL ACTION OF EXALGINE.—In the *Bulletin Général de Thérapeutique*, Sept. 15, 1889, Dr. Gaudineau publishes an elaborate essay on the physiological, chemical and therapeutical properties of methylacetanilide, or exalgine, the new hypnotic recently described in several numbers of the *Therapeutic Gazette*. The author formulates his conclusions as to the physiological action of exalgine as follows:

First.—As exalgine is an aromatic derivative, it has no marked toxic properties, and is capable of influencing the sensory and motor nervous systems, and of affecting the respiratory and circulatory organs. In poisonous doses, like other poisons of its class, its principal action is on the red blood-corpuscle, diminishing the energy of gaseous interchange into the blood.

Second.—Exalgine produces death in doses of 7 grains for every two pounds of body weight of the animal.

Third.—In lethal doses convulsions are produced, and death is rapidly produced by asphyxia.

Fourth.—In poisonous but not fatal doses of 3 grains for every two pounds of body weight, the temperature is reduced rapidly for several successive hours.

Fifth.—In a healthy man, doses of from 4 to 6 grains produced no effect beyond slight vertigo and ringing in the ears.

Sixth.—The primary action of exalgine is on sensibility; its action on thermo-genesis is secondary.

As to the clinical application of exalgine, Dr. Gaudineau formulates his conclusions as follows:

First.—Exalgine, given in doses of from 3 to 6 grains, if the subject is non-febrile, is ordinarily without effect.

Second.—Doses of 4 to 6 or 12 grains modify considerably the pain experienced by a patient suffering from neuralgia or any painful affection.

Third.—Exalgine is poisonous when administered in doses equivalent to 7 grains for every two pounds of body weight, so that in ordinary therapeutic doses it may be stated to be absolutely inoffensive, and that this new remedy is less dangerous than aconitine, digitaline, and all the alkaloids frequently given to patients.

Fourth.—The therapeutic dose varies from 4 to 12 grains administered in the twenty-four hours.

Fifth.—In these doses exalgine has never produced any trouble other than slight vertigo and ringing in the ears.

Sixth.—Exalgine is especially valuable from the fact that it does not irritate the stomach, and that the doses required are small.

The analgesic effects of exalgine are especially evident in the treatment of neuralgia, and, to a less reliable degree, in the treatment of pains of a rheumatic character. Finally, while exalgine is but little soluble in cold water, it readily dissolves in solutions containing diluted alcohol, though it is easier to administer in powder or in some solution flavored with some aromatic.

SYMPSON (E. M.) ON GLYCERINE OF BORAX IN THE DIARRHŒA OF INFANTS.—If we regard infantile diarrhœa as due to the excessive fermentation of food in the intestinal canal causing irritation and a catarrhal condition of the intestinal mucous membrane, it seems reasonable to look for a remedy to act both on the cause and effect. Glycerine itself is an antiseptic of no mean order, and relieves the congestion and pain of inflamed piles, chiefly mucous surfaces, while every mother knows the virtues of glycerine of borax when applied to the mucous membrane of the mouth. So it was no great step to introduce it further into the alimentary canal. Whether fed from the breast or brought up by hand, the motions of patients with diarrhœa infantum were like curds of milk, suggesting that the irritated intestine had hurried its contents on as quickly as possible. Again, they were very foul-smelling, suggesting great fermentation. Therefore the glycerine of borax has to do two things; to act as an antiseptic to prevent excess of fermentation in the stomach and intestines, and to soothe the mucous membrane thereof in passing over it. I have found it answer capitally; the children like it, it lessens the griping pains, it renders sweet and offensive motions, and it stops the diarrhœa. One case died while under this treatment; the child was seven months old, had had diarrhœa two days, and was utterly worn out when I saw it. But I suppose there always will be cases which come under our notice too late for cure. I give it as follows: Glycerine of borax, twenty minims; tincture of orange, three minims; distilled water to one drachm. To be given every one, two, or three hours, according to the severity of the case or the age of the patient.—*Lancet.*

CONCENRATED SOLUTION OF MAGNESIA SULPHATE AS AN ENEMA, ETC.—The advantages of this enema are:

1. Its action is local, producing diffusion.
2. Its action is free and seldom fails.
3. Time of action is short.
4. The bulk is small, causing but very little, if any, discomfort.
5. It is as unirritating as a simple enema. Its certainty of action has become so well recognized in the New York Woman's Hospital that it has been used in nearly all the operative cases, as the cathartic preparatory to operation, for the last six months.

It is best administered with the patient in Sim's position, the hips being elevated by a pillow; and when much tenderness exists it is best given through a large gum-elastic catheter passed well up into bowel. The patient is to be instructed to allow the abdominal muscles to remain lax, and the nurse is to keep up pressure over the anus, if necessary, to cause it to be retained for at least fifteen or twenty minutes. If the bowel should fail to expel the exuded liquid, a rectal tube had better be inserted in order to allow it to escape. It has not produced any bad results when two ounces have been retained, but Christison reports a case of death in a boy ten years old where two ounces were taken by the mouth without causing any purging. In my cases it probably was excreted by the kidneys nearly as fast as it became absorbed. Where it is retained the sphincter ani is likely to be strongly contracted, and great relief will follow paralysis of the sphincter by forcible dilatation under an anæsthetic, which will also have a good effect over the chronic constipation usually present.

The following is the formula I use:

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Magnesii sulph.	2 oz.
Glycerinæ	1 oz.
Aquæ	q. s. ad. 4 oz.

The solution is made more readily and its power of diffusion increased by the addition of glycerine. I have used three or four ounces of the salt, but do not see that it has any advantages over the smaller amount.—T. J. WATKINS, M.D., *Md. Med. Jour.*

REVIEWS.

THE SURGICAL TREATMENT OF VOLVULUS. By N. Senn., M.D., Ph.D. Milwaukee, Wisconsin.

THE EVIL THAT HAS BEEN SAID OF DOCTORS: Extracts from Early Writers. Collated from "Le Mal Qu'on a dit des Medecins," of Dr. S. J. Witkoski. Translated, with Annotations, by T. C. Minor, M.D. Cincinnati.

SAUNDERS' QUESTION COMPENDS. No. 6. Essentials of Pathology and Morbid Anatomy. By C. E. Armand Semple, M.D. With Forty-six Illustrations. Philadelphia: W. B. Saunders, 913 Walnut St.

STUDIES IN INTESTINAL SURGERY. By Wm. B. Van Lennep, A.M., M.D. Philadelphia, Pa.

ON THE TREATMENT OF DIABETES BY FREE PHOSPHORUS. By Balmanno Squire, M.B., London. London: J. & A. Churchill, 11 New Burlington St. 1889.

THE DISPOSAL OF THE DEAD. By John M. Peacocke, M.D., 247 Madison St., Brooklyn, N. Y. August, 1889. M. J. Rooney & Co., Printers, Cor. Broadway and 35th St., New York.

CONCEALED PREGNANCY: Its Relations to Abdominal Surgery. By Albert Vanderveer, M.D., Ph.D., of Albany, N. Y., Surgeon to the Albany Hospital; Consulting Surgeon to St. Peter's Hospital; Professor of Didactic Abdominal and Clinical Surgery in the Albany Medical College; Fellow American Association Obstetricians and Gynæcologists, British Gynæcological Society, etc., etc. Read in the Section of Obstetrics and Diseases of Women at the Fortieth Annual Meeting of the American Medical Association, held at Newport, R. I., June, 1889. Chicago: Printed at the Office of the Association. 1889.

A DIGEST OF TWENTY YEARS' EXPERIENCE IN THE TREATMENT OF UTERINE CANCER. Including 367 Operations by Galvano-Cautery. By John Byrne, M.D., M.R.C.S.E., Surgeon-in-Chief to St. Mary's Maternity; Chief of Gynæcological Department, and President of the Faculty of St. Mary's Hospital, Brooklyn; Fellow of the New York Academy of Medicine; Member and Ex-President of the New York Obstetrical Society; Fellow of the American Gynæcological Society; Corresponding Member of the Gynæcological Society of Boston; Permanent Member of the American Medical Association; Member of the Kings County Medical Society, and of the Pathological Society.

TRANSACTIONS OF THE STATE MEDICAL SOCIETY OF ARKANSAS. Pine Bluff. 1889.

PERSONAL OBSERVATIONS OF LEPROSY IN MEXICO AND THE SANDWICH ISLANDS. By Prince A. Morrow, A.M., M.D. New York. July 27, 1889.

MISCELLANEOUS.

Laparotomy for Hernia at Birth.—Dr. Phaenomenoff, of Kasan, performed this operation, which, as he admitted, had been once performed already. The pioneer of this bold proceeding was Dr. Dunlap, of Springfield, Ohio. In 1887 he attended the birth of an infant which had an umbilical hernia including the whole of the intestine, from the duodenum to the sigmoid flexure. The gut could not be reduced, owing to the narrowness of the neck of the sac and the contracted state of the abdominal cavity. The abdominal walls were therefore incised and the intestines replaced; the parietes were then sewn up. No anæsthetic was given, and the infant did not suffer from shock; it made a good recovery. Dr. Phaenomenoff's case also proved successful. The infant was born with a sac or swelling, the size of a goose's egg, over the umbilicus, the cord passing directly into that swelling. The walls of the sac were transparent, and through it the intestines could be plainly distinguished. The cord was ligatured and divided about four fingers' breath above the growth. The infant was placed under chloroform about sixty minutes after birth. Simple incision of the hernial sac was found insufficient, so the abnominal wound, made a little to the left of the middle line, so as to avoid the umbilical vein, was enlarged. It was then found that the intestine at one point was intimately adherent to the wall of the sac. The adherent portion of the sac was completely cut away, so as to be left on the surface of the gut. Reduction of the hernia was then effected with perfect ease. The contents of the abdomen were carefully protected, and then the entire sac was cut away close to its neck. Four deep silk sutures, passed through the peritoneum, and three superficial sutures were introduced to close the abdominal wound; they were removed on the eighth day. The infant made a good recovery. Dr. Stolypinsky reported the case in the *Centralblatt für Gynakologie*, No. 11, 1889. He believes that it represents the first instance where a child so young has been anæthetized.—*British Medical Journal.*

Pathology of Severe Burns.—Dr. Oscar Silbermann, of Breslau, studying the clinical and pathological signs of the destruction of numerous red blood corpuscles, found by his experiments: 1. That after extensive burns of the skin the red blood corpuscles alter their form and lose their power of resistance to heat, drying, compression and staining. 2. In consequence of these alterations numerous thromboses in the arterioles and capillaries, especially in the finer branches of the pulmonary artery, occur, leading to stasis in different organs—*e. g.*, lungs, kidneys, stomach, bowels, liver, spleen, skin and brain. 3. The large deviation of the pulmonary capillary circulation produces a considerable impediment to the emptying of the right heart and serious venous congestion, as well as dangerous arterial anæmia. 4. This state, coupled with the above-mentioned symptoms, leads to bleeding and parenchymatous alterations in the affected organs. 5.

The interference with the circulation also produces dyspnœa, a small pulse, angina, eclampsia and anuria, as well as a remarkably low temperature.—*Lancet.*

Practical Points about Surgical Dressings.—A. Vander Veer (*Albany Medical Annals*), in a report of four months' service in the Albany hospitals, says, in regard to dressings, that the methods were simple and the antiseptic agents neither new nor novel. The gauze was plain, of home manufacture, and medicated, as a rule, with bichloride of mercury. He bought his absorbent gauze in two hundred-yard lots, cut and folded this in five-yard pieces, and prepared for use. It was put in the following solution for twelve hours:

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Bichloride of mercury	1 part.
Tartaric acid	15 parts.
Glycerine	150 "
Water sufficient for	1000 "
Eosin enough to give slight tint.—M.	

After removal it was packed in stoneware jars, ready for use. The bichloride gauze was used for making "Gamgee" pads for bandages, and for iodoform gauze by rubbing iodoform in its mesh. Iodoform and boric acid were used in dressing ulcers, both in powder and in ointment. Boric acid solutions were used in washing the bladder and urethra before and after operations. A one-half per cent. solution of hydrogen peroxide, he says, was very satisfactorily used about the mouth and nose. It acts also as a powerful deodorant.

In his abdominal work hot water took the place of all antiseptics, except in the dressing. The spray was used in the room for three days before opening the abdomen. No poisonous effects were observed during the four months from the use of antiseptics, except in one case, in which a slight iodoform erythema appeared upon the abdomen after an abdominal section.

The Dread of Death.—Sir Lyon Playfair, in a letter to the author, in a paper published in the New York *Forum*, says:

Having represented a large medical constituency (the University of Edinburgh) for seventeen years as a member of Parliament, I naturally came in contact with the most eminent medical men of England. I have put these questions to most of them: "Did you, in your extensive practice, ever know a patient who was afraid to die?" With two exceptions, they answered, "No." One of these exceptions was Sir Benjamin Brodie, who said he had seen one case. The other was Sir Robert Christison, who had seen one case, that of a girl of bad character who had a sudden accident. I have known three friends who were partially devoured by wild beasts under apparently hopeless circumstances of escape. The first was Livingstone, the great African explorer, who was knocked on his back by a lion, which began to munch his arm. He assured me that he had no fear or pain, and that his only feeling was one of intense curiosity as to which part of his body the lion would take next. The next was Rustem Pasha, now Turkish Ambassador in London. A bear attacked him and tore off part of his hand and part of his arm and shoulder. He also assured me that he had neither pain nor fear, but he felt excessively angry because the bear grunted with so much satisfaction in munching him. The third case is that of Sir Edward Bradford, an Indian officer now occupying a high position in the India Office. He was seized in a solitary place by a tiger, which held him firmly behind the shoulder with one paw and deliberately devoured the whole of his arm, beginning at the end and ending at the shoulder. He was positive that he had no sensation of fear, and thinks that he had a little pain when the fangs went through his hand, but is certain that he felt none during the munching on his arm.

MEDICAL NEWS AND NOTES.

ELECTRICITY AS A DEATH PENALTY.—It is quite remarkable, and worthy of note, that since the Legislature of New York has decided in favor of electricity as a death penalty for criminals, that those criminals are the only inhabitants of New York City, who are entirely exempt from the dangers of instantaneous death from electricity.

A TRUSS for straightening crooked noses is among the novelties in orthopedics. A mask of leather was at first devised for this purpose, but Dr. W. J. Walsam has lately (*Lancet*) invented a felt skull-cap to which an apparatus is attached that produces any degree of lateral pressure on the deformed organ.

MIRRORS FOR NERVOUS DISEASES.—Dr. Allen McLane Hamilton has brought from Paris a new device for the treatment of nervous diseases, which is used there for hypnotic purposes. It is a little cherry box, about five inches square, above which projects two shafts, one within the other, sleeve and arm fashion. On each shaft is balanced a black bar nine inches long, an inch wide, and a quarter of an inch thick, edge up. By clock work on the box these ebony arms or bars are made to revolve in opposite directions. Six little round mirrors are placed on each side of each bar. The patient is placed in a chair, in a dark room, facing the machine. An electric light or any bright light is concentrated on the back arms of the machine by a convex mirror placed behind the patient, and then the arms are set awhirling. The patient watches them whirl. The motion and the flashing light operate on the nerves through the eyes. Dr. Hamilton said he had patients put to sleep by this means and some extraordinary cures were accomplished. The suggested explanation of the effect of the twirling arms and flashing lights is that they change the habit of the brain.

"UNCLE POMP," said Colonel M. to a former slave, "I hear that some of your darkies down on the lower place are afflicted with the itch."

"Bein' as its you, massa," replied old Pompy, hesitatingly, "I mus' confess dat de Lawd has seen fit to afflick us that way, for a fac."

"Oh, doing anything for it?"

"Yes, sah; Oh, yes, sah."

"What?"

"Why, we——er——am scratching for it."—*Chicago Druggist.*

THE engineers on trains running between Philadelphia and New York, are mostly young men, and they frequently change in the course of a year, as it is said old men do not have nerve to stand the strain and responsibility of engineering trains running with such terrific speed, and even the nerves of young men become shattered in time.

IT is said that the practice of drinking cologne is becoming very common in Europe and in this country, and as an indication of this that the sale of the perfume has increased greatly of late years. Women are more addicted to the habit than men, and a writer in the *Quarterly Journal of Inebriety* says that the presence of obscure and complex nervous disorders in a woman who uses cologne externally should always suggest the possibility of its internal use.

THE SHUTTLE PULSE AND ITS PORTENT IN PRACTICE. (Note of Suggestion and Inquiry by C. H. Hughes, M.D., St. Louis.) There is a peculiar pulse which I have sometimes felt but never without a shudder, when felt in the radials of those whom I have loved—never without grave prognostic impression whenever perceived in any patient.

Have you ever felt it, reader, and if you have, what has it signified to you?

I mean the shuttle pulse, as I would call it; a pulse in which the pulse wave passes under your finger as if it were floating something solid as well as fluid—that something passes along the blood current under your finger like the weaver's shuttle through the loom.

I have felt it in cases only where the blood was hydræmic and a local rheumatic inflammation existed or had recently existed within the heart.

I have called it the "shuttle" pulse because I can liken it to nothing else and because the impression it makes suggests the name.

Have you felt it under these circumstances, or any other, and do you know a better name for it?

If you have ever felt this pulse, did you ever know of a patient recovering after its appearance? Did you ever know a patient after its appearance to escape the consequences of embolic closure of vessels? To me it is the pulse of fibrinous coagula going the rounds of the circulation. Its portent has ever been evil. It is a pulse of dark prognosis and painful memories—the pulse of impending death in part or whole. I think I have never known a patient to live after such a pulse has been detected. It is the pulse of fatal rheumatic endocarditis or endo arteritis and its sequent and associate anæmia and emboli. —*St. Louis Med. and Surg. Jour.*

DR. BEAUMETZ, in *London Hospital*, states that consumption has been spread in an establishment in Paris where clerks were in the habit of expectorating on the floor and the rooms being swept while the employees were assembling in the morning.

DR. DAVID PRINCE, one of the oldest aud most successful surgeons of Jacksonville, Illinois, died on December 19th, from pneumonia. Dr. Prince has twice been a delegate to the International Medical Congress.

NITROUS OXIDE AND ETHER.—A contributor to the *Lancet* says the nauseous flavor and the sense of suffocation from ether can be entirely done away with by the use of nitrous oxide, and its inhalation made more agreeable than even that of chloroform, while the patient quickly becomes unconscious without the struggling so common with chloroform. The writer goes on to say, he has not yet found a single patient who has once inhaled ether preceded by nitrous oxide complain of suffocation, or object to take it again on the ground of its unpleasantness.

GUM arabic, for which the call has of late been rather frequent in cases of irritative coughs, has reached a very high price (more than triple its former price), owing, it is said, to troubles in the Soudan, which have checked its exportation.

AN ARTIFICIAL TONGUE (A. Poncet, Lyons).—Following total extirpation of the tongue, Ponce strongly recommends the apparatus of Martin, of Lyons, which, both in cosmetic effect as well as functionally, is said to possess the greatest advantages. It consists of a horseshoe-shaped piece of metal, which is supported by the lower teeth, something like an artificial tooth-plate. At the point of greatest concavity, a pin having an articulating point is placed, and upon this is attached a soft rubber pocket, shaped so that, when partially filled with fluid and attached, it will be about the size and shape of the natural tongue. A patient wearing this apparatus can eat and speak quite satisfactorily, and there is no dribbling of saliva, the latter being swallowed as in health. It is not probable that the apparatus favors a recurrence of the disease. Time is required to enable the pateint to become accustomed to this artificial tongue, before the full advantages and benefit of the apparatus can be obtained.

TO RESTRICT QUACKERY IN MARYLAND.—At a meeting of the Medical and Chirurgical Faculty of Maryland, on January 2d, a bill was framed to be presented to the Legislature for the protection of the people from ignorant and fraudulent practitioners, and for the elevation of the profession in Maryland. The bill provides for a board of twelve medical examiners, nine to be selected from the regular physicians and three from the homœopathists. The appointments are to be made by the Governor; the regulars on the recommendation of a general convention of the schools, and the homœopathists on the recommendation of the State Homœopathic Society. The diploma of of a college will not be accepted, and the applicant for license to practise must pass an examination in materia medica, therapeutics, and other branches of medicine. The board shall have the power of revoking the license of physicians given to inebriety, and also of persons advertising to cure special diseases which in the judgment of the board are incurable.

THE CHRIST HOSPITAL OF CINCINNATI.—The *Lancet-Clinic* announces the inauguration of a new hospital at Cincinnati with the above title. It will be under the guidance of the Methodist Episcopal Church, but nonsectarian in its charity. This is the second hospital to be founded by that Church in this country, the first one being the Seney Hospital, of Brooklyn. Dr. C. G. Comegys is the senior consultant and chief director in the new Christ's Hospital.

TYPHUS FEVER IN NEW YORK.—Three or four cases of typhus fever have been discovered in the North Brother's Island Hospital of New York City.

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IN MEMORIAM.

The Faculty of the University of Virginia, at this Regular Meeting of December 2d, 1889, *make Record of the Death of*

PROFESSOR JAMES LAWRENCE CABELL, M.A., M.D., LL.D.

HE DIED

AUGUST 13, 1889; AGED 76 YEARS.

In the year 1833 he attained the degree of Master of Arts of the University of Virginia; in 1834 he graduated as Doctor of Medicine in the University of Maryland; in 1873 he received the title of Doctor of Laws from Hampden-Sidney College, Virginia.

In December of 1837 he was called from professional study in Europe to the chair of Anatomy and Surgery in the University of Virginia, afterwards changed to the chair of Physiology and Surgery, which he occupied until a few weeks before his death, thus fulfilling nearly fifty-two years of professorial service. During the last thirty years of this service he was the senior professor of the University.

As a member of the Faculty of the University he was conservative in spirit, wise and weighty in counsel, just and firm in judgment.

As a teacher of Physiology and Surgery he was diligent and successful, constantly imparting the latest results of science, and contributing to its advance.

As a physician he was skillful and sympathetic, always ready to relieve suffering in hospital or home.

As an associate he was a friend to each one of us, a private counsellor and a peacemaker. His scholarly attainments and the great dignity of his character inspired profound respect, and ever aroused our earnest emulation.

In his death the University has lost a strong support, the church a sincere Christian, the State an upright citizen, the world a rare man.

As it is impossible, within the present limits, to do justice to his worth or to the services he rendered in his day, it is proposed to hold memorial exercises on some suitable occasion in public, which shall more fully emphasize and proclaim the excellence of his character, and the value of the work of his life.

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EDITORIALS.

It was well said by the late eminent physician, J. Hughes Bennett "inflammation is so intimately interwoven with the theory and practice of medicine * * * that in all ages, it has been made the pivot upon which the medical philosophy of the time has revolved." In his learned article on inflammation in Holmes' System of Surgery, Sinion uses this language: "it is no exaggeration to say, that rational surgery depends more upon a knowledge of the inflammatory process, than upon all other pathological knowledge put together." Seeing then, the supreme importance of this subject, it is not amiss to inquire anew into, and make manifest the discoveries, which modern investigation has elicited tending to its enlightenment. In order to this, it will be necessary to recall to the minds of our readers, certain elementary facts the result of experimental inquiry.

A flood of light was thrown upon the inflammatory process, when Cohnheim demonstrated that it might be studied directly under the microscope. For this purpose a male frog is put under the influence of curare, or æther, the intestine drawn out of a lateral abdominal wound, and the mesentery spread out on an object carrier, so that it may be placed under the microscope. Exposed to the external air and the schizomycetes found in it, inflammation appears after a short time, and its phenomena can be carefully studied. The web and tongue of the frog, are, as is well known, also suitable objects of investigation. The phenomena observed are, briefly, first, *dilatation* of the vessels, beginning with the arteries, then affecting the veins, the capillaries being least involved. Simultaneously with the vascular dilatation, an *acceleration* of the *blood current begins*, succeeded sooner or later, by a pronounced *retardation*. In consequence of this retardation of the current, the individual blood-corpuscles can be recognized in the capillaries, the veins, and even in the arteries. They accumulate especially in the veins and capillaries; especially in the veins, a peculiar phenomenon will be observed, which consists in the marginal position of the white blood-corpuscules.

These corpuscules, in other words, occupy the periphery of the current, and at times they stick fast to the walls of the veins. The red blood-corpuscles, on the contrary, continue to flow with uniform rapidity, in the centre of the current. Continued observation now reveals the fact, that following close upon the *marginal position* of the leucocytes a new phenomenon is exhibited. On the outer contour of a vein, or capillary, a projection appears, which extends farther and farther outward, and increases in volume; finally, this mass of protoplasm is connected with the vascular wall, only by a process and this becoming detached, in a word a *leucocyte has emigrated* from the vessel either vein or capillary.

After a shorter or longer time the veins and capillaries are surrounded by an immense quantity of emigrated white blood-corpuscles. Red blood-corpuscles emigrate from the capillaries, also, but not from the veins, the explanation of which is found in the fact that in the case of the capillaries both kinds of blood-corpuscles are in contact with the walls, and the separation between the two does not occur as we find in the veins. The time required for a white blood-corpuscle to pass through the wall of a vein or capillary vessel is variable. According to Cohnheim, the passage takes place very slowly at times; in other cases three or more corpuscles pass through the vascular wall at one place in succession while the observation is continued for a few minutes. Coincident with the emigration of blood-corpuscles an increased transudation of fluid takes place, so that the tissue is pervaded by it. The *inflammatory* product resulting from transudation, in contrast with that due to *stasis*, is very rich in albumen, in consequence of its large percentage of white blood-corpuscles. Cohnheim referred the cause of these phenomena to molecular changes in the walls of the vessels. In consequence of this alteration in the walls, the adhesive relation between blood and vascular wall was heightened, resistance to movement was increased, and, hence, retardation of the blood-current ensued. According to more recent researches of v. Recklinghausen, Schklarewsky, Thoma, Arnold, von Gotz and others, the view of Cohnheim must be modified; and it is absolutely necessary to distinguish between the exudation of the fluid constituents of the blood and the emigration of the white blood-corpuscles. Instructive experiments of Thoma furnish the proof that a primary alteration of the vascular wall is not always the cause of the emigration. On the other hand, a disturbance in the circulation, consequent upon irritation of the local vaso-motor centres, quickly calls forth marginal position and emigration of the leucocytes. When all further disturbances are withheld these phenomena soon cease under the regulating influence of the vaso-motor centres. If, however, the disturbance of innervation attains a higher degree, and if the process of emigration is maintained for a considerable length of time, an alteration of the vascular wall originates *secondarily*. Hence, the disturbance of the innervation of the vessels is the primary process and not the alteration of the vascular wall. In inflammation, and particularly in emigration of the leucocytes, we cannot ignore the importance of the vaso-motor apparatus. On the contrary, the exudation of the fluid constituents of the blood in inflammation can only be explained by a change in the permeability of the vascular walls as maintained by Cohnheim. In regard to the causes of inflammation, we propose, in a future issue, to enter at some length.

LA GRIPPE.—Epidemics of the peculiar, and almost constant train of symptoms, which, for the want of a better name, we classify as *La Grippe*, Influenza or Epidemic Catarrhal Fever, have for ages past appeared at different times. Indeed, it is supposed by some that Hippocrates referred to it, but his writings reveal no definite description. In the early part of the fifth century Diodorus Siculus records an outbreak in the Athenian army which was supposed to have been this malady. In the ninth century several epidemics occurred in Europe, appearing first in Italy and then spreading very rapidly over the whole continent. Since then numerous epidemics have been recorded in a more or less complete manner, but the first accurate description which we have is that of the epidemic which prevailed in 1510, the disease first appearing in Malta, thence sweeping rapidly and successively through Sicily, Italy, Spain, Portugal, across the Alps into Hungary and Germany, and thence westward into France and Great Britain. The course of this epidemic is geographically similar to many which have succeeded, viz., from southeast to northwest. The description of this epidemic is so clear as to leave no question as to the nature of the disease. In 1557 America was visited for the first time. The disease starting westward from Asia appeared in England after a season of long-continued rainy weather, and then crossed the Atlantic. In 1647 it again visited America, and again in 1655. Since then we have had numerous outbreaks in this country, one of which, in 1790, claimed no less a distinguished personage than Washington as one of its victims. The outbreak immediately preceding the present one was in 1879, and has been well described by Da Costa.

Like every other disease about whose pathology we know very little, this malady has not a scientifically correct name, but at different times and in different countries has received names which are almost purely local; thus the Russians have called it the Chinese catarrh, because it has often invaded Russia from China. The Germans call it the Russian pest, while the Italians in turn call it the German disease. The French, with their apparent disregard for everything serious and their fondness for turning everything into ridicule, have at different times called it *tac* (rot) and *coqueluche* (hood), the latter having been suggested by the cap or hood worn by the afflicted ones. It is said La Grippe is derived from the Polish Chrypka, while Influenza is of Italian derivation. During the epidemic in Vienna it received the name of *Blitz Katarrh* from the suddenness with which a great part of the population was attacked. The present epidemic was first noticed in Kolomna, a district town of Russia lying 67 miles southeast of Moscow, during the last week in October. It soon made its appearance in St. Petersburg, where, within three weeks after its advent, a majority of the population had been attacked. Next it spread through Germany and into France, and made its appearance in New York about the 17th or 18th of December, not having yet attracted any attention in London. At first people began to regard "the grip" as a joke, but it was only a few days before they were made to realize that they had a disease upon them which, although rarely fatal *per se*, caused an immense amount of suffering, great inconvenience in business circles, and greatly augmented the rate of mortality. The latter not alone by carrying off the old and enfeebled, but by enfeebling the young, hearty and robust, thus rendering them more susceptible to a vicious pneumonia or bronchitis to which many of them succumbed.

On the other hand, during the height of the epidemic, some of the daily papers printed sensational and very much exaggerated reports of the ravages of the disease. It would be safe to estimate that two-thirds of the 1,500,000 inhabitants of New York City had the influenza to a greater or less degree. After its appearance in New York it rapidly spread throughout the country. As a rule, the attacks commenced with malaise, a chill or chilly feelings followed in a few hours (12 to 24), by an elevation of temperature, the thermometer sometimes reaching 104° F. or 105° F. The pulse was full and quick, 110 to 120. Headache was always present, and in some cases most intense and persistent, there were also pains in the eyeballs, back, thighs and legs, but in the milder cases the latter were not so marked or persistent as the headaches. In addition to these there was a hard, dry, racking cough, also slight constipation, complete loss of appetite and in some cases vomiting. These symptoms lasted, with more or less severity, from two days to a week and then passed away, leaving the patient enfeebled and prostrated out of all proportion to the intensity of the disease. Expectoration commenced three or four days after the establishment of the cough, but the cough usually persisted after the patient was convalescent. In the majority of cases there was a marked absence of the catarrhal symptoms as compared with the descriptions of former epidemics.

The recent additions to our materia medica proved valuable in the treatment of this disease, antipyrin, antifebrin, phenacetine, and exalgine being used almost to the exclusion of other drugs. Of these, antipyrin and phenacetine were the most frequently used, being given together, frequently as much as 10 grs. of the former and 5 grs. of the latter every hour or two hours until the pain was relieved, and even then sometimes failing, when hypodermic injections of morphia were resorted to. At first some practitioners commenced the treatment with a calomel purge followed by large doses of quinine, but the latter soon gave place to the drugs above mentioned. After the acute symptoms had subsided, iron, quinine, the bitter tonics and cod liver oil were useful in hastening a restoration to health.

The complications and sequelæ, although many in the aggregate, were very few in proportion to the number of persons affected. Pneumonia and bronchitis, with an occasional otitis media, were the ones most frequently observed. The pains have been compared, in character, to those of dengue, and it must be acknowledged that there was quite a similarity. The contagiousness of influenza has long been a mooted question, but that the disease is dependent upon a specific micro-organism does not admit of doubt, and already there are a few who believe this micro-organism has been discovered. It would be impossible for this disease to appear, as it does, in epidemics, and the same train of symptoms to be set up, with lightning like rapidity, in thousands of people were there not a constant cause, and even though it can not be absolutely proved that it is contagious, yet there are some facts which make one incline strongly to that belief.

Another point concerning the present epidemic is the fact that a very small number of young children were attacked, and when attacked usually had the disease in a moderated form, but a few cases were observed in very young children. There is a popular belief that an epidemic of cholera usually follows an epidemic of the disease in question, but is almost unnecessary to say that this belief has no foundation.

In the course of an editorial entitled "Instruction for Graduates in London," the *N. Y. Medical Journal* for Jan. 4, 1890, says: "A central institution conducted by a staff of London teachers would attract a very large proportion of those who flock to continental towns. If a number of Germans or Frenchmen, speaking a language unknown to most of us, can so arrange their courses of instruction as to attract graduates from every school in the world, surely a number of Englishmen, of at least equal talent, supplied with as good clinical material, and speaking our own tongue, can enter the lists as formidable rivals of their brethren of Berlin, Vienna and Paris." Now, while there is much that is true in what we have quoted, the writer ignores entirely one of the chief elements that attracts students to foreign countries. If they are well informed how and where to get instruction, and what they desire is simply to increase their store of medical and surgical information, to see good work, to attend good clinics, it is not necessary for them—if Americans—to leave their native shore, if Englishmen, to cross the Channel. Grant that many who have had the best advantages that this country affords, have gone abroad expecting to see and hear and learn much that they had not had an opportunity for so doing in this country; but what has been, what is the almost daily report of those who come back? That they have been disappointed, not to say deceived. Then you may ask, do we deprecate study abroad? And without hesitation we answer: By no means! Nor is our position contradictory—and this brings us back to the point—the *punctum saliens*, that is entirely ignored in the editorial quoted. It is for a knowledge of the language primarily, and with it that broadening in general culture that can only be gained by mingling with people speaking a different language, and by studying their manners and customs, that the student goes abroad. There is, without doubt, an advantage in seeing the way in which they teach and handle cases, etc., etc.; but for the actual increase in medical or surgical knowledge alone, the trip abroad is doubtless often a waste of time and money. All of this, however, is not to discourage study and travel in foreign lands; on the contrary, we would urge all who can, to go. But let them go with a proper appreciation of what is to be gained, and they will not come back dissatisfied and disappointed, with no knowledge of the language, and of the people, and with less knowledge of their profession than when they left.

DR. T. GAILLARD THOMAS' work on Diseases of Women has been translated into the Chinese language, and Chinese medical men are congratulating themselves upon this very important addition to their scientific literature. The book is divided into five volumes, printed in the characteristic Chinese style, and on their peculiar thin brown paper. Of course it is to be read backwards, and up and down the page, while the title is carried along the outer margin of each page.

Perhaps no other American book has been rendered into as many languages as this one, as it is now translated into French, German, Italian, Spanish and Chinese.

This last compliment was wholly unknown to Dr. Thomas until the volumes were placed in his hands.

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GAILLARD'S MEDICAL JOURNAL.

VOL. L. NEW YORK, MARCH, 1890. NO. 3.

ORIGINAL ARTICLES.

ARTICLE I.

PERSISTENT HEADACHES, AND HOW TO CURE THEM.

By JULIAN J. CHISOLM, M.D.

Professor of Eye and Ear Diseases in the University of Maryland
and Surgeon-in-Chief to the Presbyterian Eye, Ear and
Throat Charity Hospital of Baltimore City.

Scientific truths disseminate themselves very slowly. The well-tried and thoroughly proven have to be often discussed, and are as frequently forgotten, before they take root. They then give evidences of the fruit which they should have earlier borne. In this category is placed the medical and now well established fact, that among the many causes of most persistent headaches, eye faults are perhaps the most common. As a rule, they are the *last* to be recognized.

Headache is acknowledged to be one of the most constant effects of systemic disturbances. It is present in all of the acute inflammatory diseases, and in most of the chronic ones. When any of the important organs of the body get out of order, the head suffers. The brain, the heart, the stomach, the liver, the kidneys, the uterus, all of them, can produce headache. We know with what readiness the emptying of an impacted bowel will clear up head discomforts. *The mistake made is to believe these the exclusive causes of headache.*

Many of these sources of trouble to the head are fortunately readily found, and some of them are very easy of detection. But there is a very large number of head discomforts in which no acute inflammatory condition exists, to explain the disturbance of this sensitive centre. The general health of the individual is good. No one organ seems to be out of order. The digestive apparatus is in perfect condition. The liver is doing its best work. There is no uncomfortable heart throbbing nor face flushings. The kidneys are sound, with normal urine. If there be a uterus, its presence is known only at the catamenial periods. Yet the head is not comfortable.

The supposed omnipresent cause of general disturbance, *Malaria*, is then invoked to account for the frequent complaining. It is found without seeking for it, and it is exorcised by frequently repeated doses of quinine, *accompanied by rest.* Relief comes temporarily under this treatment, as it would under any other, but the cure is only of short duration. When the malarial theory fails and some other has to be sought, too close confinement to the house or business is suspected, and relaxation from work with fresh air exercise is enjoined. Good at once shows itself from this course of hygiene; but the head discomforts will return.

Then comes a suggestive thought on the part of the troubled family physician in his vain efforts to find a satisfactory cause for his patient's sufferings. He calls the trouble *neuralgia.* Under this name the patient is often willing to suffer, obtaining occasional relief by taking quinine, morphia, antipyrin, the bromides, or some allied drug. Finally it dawns upon the patients that when they took medicines or open air exercises, and *stopped work,* relief came; but that when they resumed their occupations of reading, writing or sewing, these being the every day employments of the majority of the population in cities, their heads would ache. From their own observations they would propose the question to their medical adviser: whether in some way the eyes may not be responsible for much of the trouble which they have so long suffered? Once the discovery is made, the cause and effect can be constantly traced. They then find out that they can read, write, or sew themselves into a headache. This sequence is so common, the degree of discomfort being in proportion to the nervous temperament of the patient, that it ought to have been detected at a much earlier period.

It is a safe rule for a physician to follow: to look to the eyes as a common cause of head disturbances when the frequent headaches of a patient are not produced by some tangible disease. As a cause of headaches, eye troubles should always precede malaria, neuralgia, biliousness, dyspepsia, and such commonly attributed, but very obscure, sources of disorders; and this even when the patient's painful head symptoms temporarily yield to quinine, iron, arsenic, caffeine, a blue pill, or soda mint.

Unfortunately, when the fault in the eye is paining the head, and is secondarily disturbing the whole body, the eye itself does not necessarily take on a conspicuous congestion. It is not even always painful; so that the casual observer can see in it no cause for trouble. Many persons know that under the continued use of the eyes the head aches, but the seat of pain need not necessarily be in the eyes themselves. Fortunately, in the majority of cases it is the pain in the eyes that precedes the pain in the head. If this sequence always existed there would be less trouble in making a correct and early diagnosis. A very misleading fact with pain-making eyes is that often vision is apparently perfect. Persons will remark that they can see as far as any one, in evidence that their eyes cannot be the seat of the disturbance. They do not appreciate that sharp vision is one thing, *easy* as contrasted with *labored* vision quite another. They cannot distinguish between the work done and the exertion needful in its accomplishment until the accumulation of the extra effort induces pain.

Some patients will give this as the history of their troubles. Up to a certain time they had as they supposed the strongest of eyes. They overworked them, and now they will stand no continuous work. A book-keeper properly attributes his annoyance to over night work in getting his books up. A school-teacher found the eyes painful after the examination of an extra number of exercises. A lady had no eye-pains until she forced them on fine embroidery for Christmas gifts. A school-boy traces his eye and headaches to over ambition in preparing for an examination. A student who had unavoidably lost time, decided to keep up with his class by doing back-work in addition to the day's requirement; and to effect this, had to drive his eyes for more hours of the twenty-four than prudence allows. With them all, since the first break-down in their eye-sight, a very few minutes of reading, writing or sewing causes the eyes to water, and burn, and produces a brow stricture with eye pains. Now the head is only comfortable when the eyes are at rest. If eye-work is persisted in the pain extends to the temples, then to the top of the head, and even to the back of the neck. Some refer all the pains to the top of the head, while the back of the head and the neck annoys others the most. In a few even the stomach becomes upset, and nausea follows, not because the liver or the brain is diseased, but as reflected disturbances from the over-taxed eye muscles. One patient complained of a peculiar sensation of constriction over the heart, which accompanied the eye and headaches. As he could bring on this very disagreeable chest pain by reading, and no chest disease could be found upon the most careful examination, the reflex association from the eye to the heart nerves could be clearly traced.

Nature does wonderful work. The function of any organ is a marvel far beyond our comprehension, and the eye is one of the most intricate parts of the body. While we are lost in admiration over its wonderful mechanism, as an optical instrument, we are aware also of some of its imperfections. We find many human eyes far from perfect. In communities advanced in civilization a perfect eye is rather the exception. Nature may start them right, as is seen among the wild tribes, who have exceptionally good eyes, but no education. School abuses soon upset them. *Near-sightedness is becoming too common an eye trouble, and has as its fruitful source the present forced education of the very young.* In these days there is no play time for children. Lessons in school and studies out of school absorb more than the daylight hours. Brain work is known to be more exhausting than hard work, and young eyes cannot submit to this constant application without injury.

There is a Society protecting children from cruel treatment. It prohibits their employment in factories. *The factories which should head the list as most abusive to their general well-being are the schools as they are now conducted.*

The average citizen restricts his idea of muscular labor to the hands alone, not knowing that eye-work is a perpetual muscular labor, and of a very fatiguing character. When a person is reading, or sewing, or writing, the small but all important eye muscles, are as hard at work in their way as the arm muscles would be in sawing wood, or lifting heavy weights. These eye muscles are as capable of being fatigued, and when fatigued cause pain. This pain need not be restricted to the overworked muscles themselves. They draw into nervous sympathy contiguous parts of the body, and cause the so-called neuralgias of the head. An extremely common expression, daily received from patients, is that they have so much neuralgia that it makes their eyes pain them. When explained properly it means they have so much eye strain that it makes neuralgia in the head, and then pain in the eyes.

All eye faults (and we use this term as distinct from eye diseases) do not cause headache. By eye faults I mean a faulty form of the eye-ball, a deviation from the perfect type, by which easy focusing of the crystalline lens to form clear pictures on the retina is interfered with. Good sight means an eye which can make sharply defined pictures on the retina for brain interpretation. If this be done without effort the machinery runs smoothly and without discomfort, even if kept up by the hour, or by the day. There is a large class of clear, perfect looking eyes, with apparently excellent sight, which give way under the continued use our every day affairs demand. These eyes would never show their faults were they not pressed by continuous labor. This fault resembles a flaw in the wheel of a railroad car, which can, and has run, for many years at a thirty-mile rate, and seems as good as the best, but when driven at a sixty-mile speed goes to pieces. The trouble with such eyes began when additional work was put upon them, and they have given trouble ever since.

The true headache eye is known as an *astigmatic* one, from the Greek word *α στιγμα*, not a point, which means that a point of concentrated light is not being clearly made on the retina by the focusing apparatus. This astigmatism is usually a fault in the shape of the cornea, although it may be more rarely produced in the crystalline lens, or might even be from irregularities in the surface of the retina itself. It disturbs the making of sharp retinal pictures, and, to effect a designed purpose, demands on the part of the eye muscles more work than nature intended. Should we similate the cornea to the glass which covers the face of a watch, we can readily understand how the glass may be so squeezed out of shape by lateral pressure as not to fit the perfect rim into which it should adjust itself. In examining such a faulty watch-glass we will find that the curvatures are not uniform in all directions; also that in the direction of the pressed edges the curvature is greater than the opposite or true surface of the watch-glass. The cornea is in a similar manner distorted into astigmatism. When the two meridians of curvature at right angles to each other are taken, they are not found uniform. They should in good eyes represent curved surfaces, all of which are made by one radius. Unfortunately, in astigmatism there is a different radius for each of the two curved surfaces.

The fixed law of optics makes the curvatures of a transparent surface responsible for the focal strength or condensing powers of such a surface. When in an eye these corneal surfaces all correspond, light passing through them on its way to the retina is bent uniformly toward one point, which is called the focus. That brings out on the retina a sharp picture made up of microscopic points of light. If, however, these corneal surfaces are not uniform, the parts corresponding to these varied curvatures, each acting as a lens, will produce two foci of light. Both of these foci cannot be on the same screen at the same time. The perfect part of the cornea will make its image in bright, luminous points on the retina as on a screen. The imperfect part in unfocused luminous rings will cast a shadow over the brighter points, and will more or less blur them. Then comes intuitively an effort on the part of the eye muscles to correct the faulty focusing and make the whole picture bright. This is an unusual muscular act, and has to be repeated for every picture that is made on the retina.

It is easy to calculate how many of these distinct pictures are made in reading or writing, as nearly every letter must have its own and exclusive photographic impression. The brain must register this impression before it is effaced, so that the retina may be made ready for the succeeding letter. To those who have never tried the experiment, it is very startling to discover how small a part of a word we clearly see. Shut one eye and look at a word containing six letters. To see all of them sharply, you will find the eye moving from one side of the word to the other, proving that the six small letters cannot all be focused sharply simultaneously.

When a well-shaped eye adapts itself for reading there is, as it were, a steady contraction of the accommodating muscles, a very easy condition to sustain, even for long periods. With an astigmatic eye a new adjustment of the muscular apparatus has to be made for every picture; a species of perpetual motion, which cannot avoid producing fatigue and consequent pain, both in the eyes and in the head. Each surface has to be separately focused by the eye muscles upon the retina, because the two cannot be focused together. To keep the elasticity of the lens in a perpetual state of activity, focusing first for one corneal meridian, and then for the other, demands incessant activity of the intra-ocular muscles. This tax is especially demanded when the eye is exercised in near work, the more especially under bad illumination. For an astigmatic eye all work is more or less of an effort, and night work by artificial light is especially fatiguing and painful.

The work of the ciliary muscle in astigmatic eyes may be likened to the irregular squeezing of an object by the hand. A well-shaped cornea focuses all light passing into the eye by one movement, just as the hand seizes and holds an object by the uniforn pressure of all the fingers. No fatigue ensues upon this simple muscular activity. If, however, the fingers do not all clasp simultaneously the object, the thumb and second fingers at one time, to be followed by the remaining fingers in succession, these groups relaxing and contracting at the rate of so many times a minute, fatigue must result. If these irregular muscular hand movements were persisted in, pains would be felt in the fingers, and, extending up the arm, would cause an aching of the whole limb.

The source of sensation for the intra-ocular eye muscles is from branches of the fifth cranial nerve, the great nerve of sensation for for the whole head. It is a law of the human economy that when one branch of a sensitive nerve is excited all the branches might exhibit sympathetic irritation. From the anatomical distribution of the ophthalmic branch of the fifth nerve to all parts of the scalp we must expect these so-called neuralgic pains to accompany eye irritations; therefore the irregular action of the eye muscles in astigmatic eyes, being a common cause of local irritations, must be one of the fruitful sources of head disturbances. Then, will also come into play nerve reflexes, intricate and far-spreading, and not restricted to the head alone. Some patients complain of dizziness, giddiness and irregularity in walking. Others of heart irritation, chest constriction, and of nausea. With a few the eye lids are constantly twitching or the face muscles indicate irregular movements. These various symptoms come on as the immediate sequel of eye work. With the very sensitive these uncomfortable results appear when the eyes have been used for only a short time; with others only after long and continuous application. When, however, the eyes finally break down, the irritability persists even when no close eye work is done. Reading, for even a very few minutes, causes pain. The eyes become sensitive to light, and more or less persistent headache results. The irritation excited through the little use of the eyes during the day may last through the night, so that the patient is never freed from head disturbance. With some, these headaches are so constant from the ordinary uses to which the eyes are put, no eye congestion accompanying them, that it is not surprising that the diagnosis is obscure, and that physicians are led astray. I daily see such cases. They report themselves the victims of perpetual neuralgia, or of malarial saturation, or of brain troubles, because the head aches so ; or they believe themselves dyspeptic and bilious because of frequent nausea. With few exceptions they have had years of medical treatment, with only temporary relief when the eyes were rested.

For such headaches, and they are very common, there are but two remedies. The natural remedy is to abandon all use of the eyes, and by so doing not to excite the irregular fatiguing muscular contractions which the use of astigmatic eyes demands. Simple and effective as this restful idleness is, it is impossible of application. No one in these busy days can make this sacrifice of doing absolutely nothing. The only remedy then left is to correct the excessive and irregular action of the interior eye muscles. This is accomplished by the use of cylinder glasses. When carefully selected, properly mounted and constantly worn, at least for near work, they make all the corneal curvatures act as if uniform in their focusing power, and the function of seeing becomes an easy one.

The observation is constantly made as to the number of young persons now wearing glasses. Every year must increase this ever growing army. Not many years ago the aged alone were supposed to require them, and hence the wearing of spectacles was considered synonymous with being, at least, forty years of age. This popular interpretation grated very harshly against the weak points of many a character who would not be thus classified. Notwithstanding the daily observation to the contrary, this conception is still held by many thoughtless people who would rather suffer bodily discomforts than secure immunity from pain at this trivial cost. The simple explanation for the number of spectacles now worn, as seen on the streets, is in the better knowledge of the causes producing the discomforts complained of. For the spectacles with the privileges of full eye work without pain, there was substituted a few years since confinement at home, often to a darkened room, where unseen by the outer world the badly treated patients were forced to abstain from all eye work ; and induced by the hope of securing relief, to undergo a persistent, annoying, injurious, because useless, course of medication. The scientific basis for modern medical practice shows an immense advance in this department of surgery.

By wearing proper glasses the eye machinery runs smoothly, and headaches of years continuance disappear as if by magic. A hypodermic injection of morphia cannot more promptly check pain than does the putting on of proper glasses relieve headache. Relief is often immediate with the putting on of cylindrical spectacles, and it becomes permanent under their continued use. Often during the first consultation, when the proper glasses are placed before the eyes for even a few minutes, patients remark *how restful the trial glasses make the head*, and how the old sensations of discomfort come back the moment the glasses are removed.

Quite recently an intelligent lady, 26 years of age, from a distant city, could not for years recall a single day's freedom from headache. Very often she had to seek comfort in bed, in a dark room. Her case was one of irregular near sightedness, or, as it is termed " myopic astigmatism." When the proper glasses were adjusted the beauty and comfort of seeing was a revelation to her, which she expressed by face as well as by words. She wore the glasses prescribed, and for the first time in her remembrance enjoyed the comfort of freedom from pain. The giddiness in her case had been so annoying and her gait so unsteady, at times, that she found no pleasure in walking. With the correction of the eye irregularity came a steadiness of tread delightful to enjoy. I found that the nose-bridge of her spectacle-frame was a little too narrow, and suggested that the optician open it a little. For three days she had been leading, as she said, a life of luxury, going where she pleased, reading all she wanted, and with perfect bodily comfort. At my suggestion she visited the optician to have the frames properly bent. Awaiting the correction of the frames in the store, she was forced to go without her spectacles for ten minutes, and her headache promptly returned. As she said to me: "You may imagine my anxiety to get my glasses back again, and how I enjoyed them from the moment I put them on."

Astigmatic eyes I see and correct every day.* All astigmatic eyes under continued use cause eye and head pains: headaches more or less persistent being a constant accompaniment of such faultily constructed eye-balls. *Properly selected and properly adjusted cylinder glasses alone will relieve such.* I therefore cure persistent, long-lasting, very annoying and more or less severe headaches every day by prescribing the needed glasses. With very few exceptions all of these patients have been under medical treatment; some for very long periods. With these patients nearly every organ of the body, *except the right one,* has been falsely accused of creating and keeping up the head disturbance. Mercury has been given to many of them for supposed liver torpidity on account of nausea. Iodide of potash has been swallowed by the quantity for the purpose of correcting some supposed syphilitic taint, of which there is no history. During the many years of suffering quinine has been prescribed to the extent of ounces to break up imaginary malarial impressions. The temples have been leeched and blistered, and the head neuralgias have been vigorously but unsuccessfully fought by a host of active remedies. Pessaries have been worn because some displacement of the uterus was supposed to be in some mysterious way connected with the head trouble. Often it has occurred, when the physician's long list of remedies is exhausted, that a friend of the patient has suggested that the constant headaches of one of her acquaintances was cured by the wearing of glasses, and perhaps in this case benefit might equally come from their use. In this indirect way some patients finally get relief.

The object of this paper is to draw the attention of physicians to the fact that constant headaches, even when not connected with imperfect vision, or painful eyes, may be caused by faultily constructed eye-balls. Also as irregularity in the focusing power of the eye is a common source of headache, in cases in which the cause of the head disturbance is not patent, its connection with an eye fault ought to be the first eliminated: more especially because when such is the case medication is of no avail in obtaining permanent relief. Tonics to the enfeebled, by increasing muscular strength, may temporarily or partially remove the discomfort. It does not remove the cause, and therefore a tonic cannot cure.

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* Nine hundred and ninety-three private patients with astigmatic eyes were treated by me during the year 1889. Several hundred more were treated at the Free Dispensary of the Presbyterian Eye, Ear and Throat Charity Hospital during the same period.

Rest for such eyes, when pain in the eyes accompanies the headache, effects no permanent good. The trouble remains to annoy as soon as the eyes are again put to use. There is but one way to rest such badly shaped eyes, viz.: correct the fault by properly adjusted glasses. This alone will allow the weary muscles rest.

There are thousands of young persons in our midst to-day who are impatiently resting their eyes for weeks and months at a time, under bad medical advice. Some are kept from school, a serious break in their education. Others can illy spare the time lost from their various pressing occupations. All are taking physic to enable them to escape from annoying headaches which come on whenever they apply themselves. These numerous, long-suffering, and much abused patients need some one to suggest to them the well established fact that, although the eyes do not visibly inflame, they are a common cause of head discomforts: and that this fact in their respective cases is calling for recognition. This advice should come always from the family physician, and should not be accidentally obtained from unprofessional sources.

ARTICLE II.

HYPERTROPHY OF TURBINATED BONES WITH REFLEX PHENOMENA.*

By ALBERT SHUNK, M.D.

Mr. President and Gentlemen:

The subject of neuralgia of the fifth (5th) nerve has been brought to the attention of the profession repeatedly during the past year. The eye as an ætiological factor has been well emphasized, and I do not believe there is a general practitioner in the city, who does not bear this in mind when examining a case of supra orbital neuralgia. In fact, I find many intelligent members of the laity consult oculists for this neurosis before consulting the general practitioner, and, I must say candidly, often to their advantage.

The following cases which I wish to report, will bring to your attention a factor in the causation of neuralgia of the fifth that has not been so well brought out in our journals and societies, and that is but vaguely hinted at in many text books on diseases of the throat and nose. Their importance may be estimated by the severity and duration of the patient's suffering and the rapidity and permanence of the cure.

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* Read at a meeting of the New York County Medical Association, held Dec. 16, 1889.

Case I.—In July, of '87, Mr. R. B. wrote me that he had been suffering for the previous six months with headache of increasing severity. His eyes were also giving him trouble, and he had found it necessary to stop business. The letter was written in a large, scrawling hand, which was due to the fact, as he afterwards explained, that he was compelled to write part of it with his eyes closed, on account of pain. I wrote to patient to come to the city and report at my office which he did at once. He was twenty-five (25) years of age, was born in the lake region, unmarried, was a clerk in his father's bank. He is a descendant of delicate stock. His mother has been an invalid for years and a great sufferer from neuralgia. He has a brother aged 35, who is also a victim to this affection. He has a sister an invalid, but the cause of invalidism is unknown to me. I found the patient in fair general health, but much depressed mentally on account of his suffering. He stated that he could see objects as distinctly as ever, but that the pain in his eyes and supra orbital regions was so intense that he could read but one or two minutes at a time, and could not write even a short letter. He felt pain deep in the eye, and he explained it as feeling as though something were drilling into its fundus. There were also paroxysms of supra orbital and temporal pain of the same description. The pain in the head had been the first to appear and had been followed by the eye pain. The pains were bilateral, but much more intense on the right side. I decided that it was a case for a specialist, and referred him to one of our leading oculists without further examination. The doctor examined his patient carefully and prescribed glasses with such other advice with regard to the use of his eyes as he deemed necessary. After remaining in the city for several weeks, the patient returned home feeling somewhat improved, but wrote me in a short time of a recurrence of his trouble. He was advised to come to the city and see the oculist for a second consultation. This he did, coming on about the middle of October. After four (4) or five (5) visits to the office of this specialist, he was told that nothing further could be done for his eyes, that there must be some other factor at work in the case, and that he had better consult me with regard to his general health.

He came to my office November 19, '87. He was much more depressed than on his previous visit, and even intimated that self destruction was preferable to a life of inaction and suffering. * * *

A thorough and systematic examination was made of all his organs in hopes of finding something bearing directly or indirectly on his trouble, but with negative results. The patient did not drink or smoke, had never had any venereal disease, and was a careful and intelligent observer of the laws of Hygiene. Upon making a Rhinoscopic examination, a condition of affairs was discovered which I thought might fully account for his symptoms. The lower turbinated bones were hypertrophied. The middle turbinated bones were enormously enlarged and pressing upon the septum. Their removal was advised and practiced. The lower turbinated bones were removed by the galvano-cautery wire, while the middle turbinated bones were removed in the ordinary way by chromic acid. After the first four or five applications, the pains began to decrease, but were aggravated at the time of each treatment. The patient improved as rapidly and satisfactorily as could be expected from this slow treatment, and was discharged cured in April, of 1888. He is now at home in full possession of health, and is reading law. He writes me that he has had no return of any of his pains since the last application of chromic acid.

Case II.—Mrs. C., called to see me December 4, '88, æt. 40, widow, 1 child, a son, æt. 19. Nothing of note either in the family history or in the patient's history prior to the beginning of the present trouble. Four (4) months before her visit to me, she had noticed that she frequently suffered from a supra orbital and temporal pain on the left side. This was particularly marked when she attended church or the theatre, or attempted to read. She had consulted an oculist, who after repeated examinations had told her that he could do nothing further, and that she should consult a general practitioner. The patient was excessively nervous and melancholy. Nothing in the history, as before stated, threw any light upon the case. She had been perfectly healthy till the pain started, and she regarded her nervousness as dependent upon that. Upon percussing the spine, I found a tender spot at the junction of the cervical and dorsal vertebræ. There were noticed peculiar nervous twitchings in the muscles of the extremities, mouth and eyes. The patient had never had the slightest catarrhal symptoms, but the left middle turbinated bone was decidedly enlarged. In as much as I had often seen much larger turbinated bones without any reflex phenomena, and there had never been any catarrhal symptoms, I decided not to touch the nasal cavity, but to meet the other indications.

The patient was carefully instructed with regard to food, rest, exercise and baths, and during the following six (6) weeks, took in appropriate doses:—Strychnine, Quinine, Iron, Arsenic, Phosphates, etc. Still there was no improvement, and I finally determined to remove the left middle turbinated. This was done by chromic acid, all internal medication being stopped.

After the second (2d) application, the pain began to grow less, and from this on the improvement was steady and uninterrupted. The last application was made in the early part of April of this year. During the latter part of May, the patient called to let me know that there had been no recurrence. She was in good health and all her other nervous phenomena had disappeared. She went to Newport for the past summer, and upon her return this fall, called to see me and say that she was perfectly well.

The study of two (2) cases, Mr. President and Gentlemen, is not sufficient for the purpose of establishing any absolute rules to guide our conduct, but they may serve to put us on the alert with regard to the possibility of finding a cause for neuralgia within the nasal fossæ. These two cases having occurred in a general practice of modest proportions would seem to point to the fact, that the condition of the nasal cavities may be a far more important factor in the production of certain cases of headache than many of us have hitherto supposed.

It strikes me that it is a good general rule in practice to make a through examination of the intricacies of the nasal cavities in cases of neuralgia of the fifth, when there is no clue to be found in patient's history or general condition, and when the eyes have been pronounced sound by an expert.

ARTICLE III.

The Use of Belladonna in Spasmodic Rigidity of the Os Uteri During Labor.*

By S. S. Cartwright, Roxbury, N. Y.

Belladonna has been used from time to time for this purpose, being lauded at times, then again falling into comparative disuse, to be again brought forward. In looking backward over the history of the use of this drug we find it recommended by Conquest, in London, in France by Chaussier, Velpeau and La Chappelle, while per contra Ramsbotham condemns it and says, "it seems to have no effect in producing relaxation of the os uteri," and, further says, "that if it does no good, it must do harm from the friction which is necessary for its efficient application." He further says, "It is recommended that one or two drachms of the ext. be used," which seems to me tô be altogether too much, and leads me to the conclusion that he has not had personal experience with the drug.

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* Read at the New York State Medical Society, Feb., 1890.

Chaussier, who has particularly recommended the drug, uses an ointment in the proportion of one drachm of the ext. belladonna, or juice to one ounce of lard.

Prof. P. Du Bois uses preferably, the ordinary drug ext.—a pellet as large as a pea carried up on the nail of the index finger and left within the cervix where it soon softens, is absorbed and produces its effect.

Cazeau & Tanier (Am. Ed. page 700) say further: "That the belladonna so highly lauded by some accouchers is by others thought to be useless," (it seems to me that this difference of opinion has arisen from confounding simple rigidity with spasmodic contraction,) "though without action in the former case I think it very useful in the latter." (Same page, 700.)

In looking over the different remedies recommended by different practitioners, we must admit that the cases of spasmodic rigidity are difficult to deal with, for wherever you see many remedies recommended, to cure a certain disease, we may be well assured that the difficulties are real. This is the case with rigidity of the os uteri, whether simple or spasmodic.

Dewees comes forward with bloodletting, another with injections of laudanum, another with injections of olive oil or mucilaginous substances, some with anæsthetics, others still with warm baths, and now I wish to contribute my mite to the subject.

During a country practice of thirty-five years I have been engaged in the practice of obstetrics as a general practitioner, and those present, who have been similarly engaged, whether in city or country, will recall many cases of tedious labor from different causes. Among them each one will call up one or more every year, dependent on rigidity of the os uteri, either simple or spasmodic, and we have tried conscientiously the different means proposed. To such I wish especially to call attention to a few cases in which I have used the ext. belladonna with success, and hope that others may be induced to do the same, not only as saving their own time, but much suffering to the patient.

I was called November 26, 1889, to see Mrs. S., between 11 and 12 P.M. Pains were frequent. After an hour or so made an examination, could not introduce tip of index finger of right hand At intervals of an hour or two repeated the examination. At daylight no progress, pains more severe, but during the pain no dilation. Gave fifteen grains of chloral which produced some sleep. After three or four hours gave another dose but with no effect on the os uteri. Thus the day wore on until 5 P. M. when, taking the bearings, I make up my mind to another night's waiting and watching. I then took a piece of ext. belladonna, the size of two large peas, mixed it with vaseline, and under pretense of making a vaginal examination, applied the most of it to the os uteri. At 6 P. M., not expecting any result from the drug, I retired to bed. I was aroused from a sound sleep at 7:30 P.M., found the labor progressing favorably, os uteri dilated, membranes protruding through and pressing on external parts. The labor was concluded at 9 P. M., the uterus *firmly contracted*, and the patient comfortably in bed.

You will say this may not have been the effect of belladonna; I believed it was for the reason that it proceeded to its full physiological effect; the pupil was dilated fully, insensible to light, and remained so for over twenty-four hours. There was also the peculiar, well-known dryness of the throat recognized by every one who has used atropine hypodermically.

Case II. Mrs. P., primipara, æt 36 years, was called in the night about 10 or 11, patient is delicate, pains were regular, but produced but slight if any effect. At 10 A. M., after a careful examination, concluded that it was a case of spasmodic rigidity, made an application of belladonna to cervix, and had the satisfaction within an hour of finding the spasmodic rigidity giving way, the os dilating and membranes protruding through. This case, which at 10 A. M. appeared good for twelve hours longer, was concluded at a little after 12 M.

There is one point I wish to call your attention to, and that is that in both cases after expulsion of the placenta the uterus contracted firmly and permanently, and scarcely any hæmorrhage.

I have used the remedy in another case without any result, and believe the same to have been a case of simple rigidity.

If, in presenting these cases to the Society, I should impress upon the minds of some of you to try this old remedy, and it succeeds with you as with me, it will save you hours of waiting and your patient hours of pain.

SELECTIONS.

THE POST-MORTEM IMBIBITION OF POISONS IN ITS MEDICO-LEGAL BEARINGS.*

By JOHN J. REESE. M.D., Late President of the Medical Jurisprudence Society of Philadelphia, and Professor of Medical Jurisprudence and Toxicology in theUniversity of Pennsylvania, etc.

The phrase—*post-mortem imbibition of poisons*—literally signifies the imbibition of poisons into an animal body after death. To the toxicologist, however, it has a more distinct, specific meaning—namely the infiltration into the different organs and tissues of the body of poison which has been introduced after death either into the stomach the rectum, the abdominal or the thoracic cavities, and which has subsequently penetrated by transfusion into the adjacent viscera.

The whole scientific interest and importance of this subject centre in the fact so essential to the toxicologist—that in his search for a poison in a dead body, in a criminal case, the grand object of the analyst is not merely to discover this poison in the stomach (since there is always the *possibility*, at least, of its having been introduced here after death), but rather to detect its presence in the various organs and tissues of the body, as the liver, kidneys, spleen, heart, lungs, brain, spinal cord, and even the muscles and bones, into which it had been carried and deposited by the circulation during life, and where its remains may often be discovered a long time after death.

Now, the detection of this *absorbed* poison—as it is rightfully named—in any of the organs of a dead body has hitherto been universally regarded as the most positive and satisfactory proof that the poison had been taken during life, and that it was undoubtedly the real cause of the death, in the absence of all other obvious causes, revealed by the post-mortem examination. Certainly, it would seem, there could be no other legitimate conclusion. But it will be at once apparent that if it can be shown that by introducing a poisonous solution into the stomach, rectum, abdominal or thoracic cavities, or blood-vessels, *after* death, this solution will pass through the walls of these cavities, by the well-known physical law of osmosis, or transfusion, and will gradually but surely penetrate into the adjacent viscera, —first into the nearest ones, and subsequently into those more remote, so as to be discovered in them by chemical analysis; then I submit that a most serious and vital difficulty might present itself, fraught with no little danger, namely, the risk of confounding or mistaking the one condition for the other, in a case of alleged criminal poisoning, where the issues of life and death are at stake, and where the evidence for conviction might be dependent chiefly or solely on the chemical analysis. For, as is evident, there is absolutely nothing in chemistry alone to distinguish between them; the same tests must be applied to both, and they must yield the same results.

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* A paper read before the Medical Jurisprudence Society, of Philadelphia, by special request at the stated meeting Nov. 12, 1880.

Those persons who have given no special attention to this subject may be surprised to learn that such a question should ever be raised in a criminal trial for poisoning; but cases not a few have occurred, and their number is increasing, where the whole question of the guilt or innocence of the prisoner may hinge simply upon this very point —whether the poison that has been discovered in the organs of the deceased may not possibly have been first introduced into that body after death, for a wicked and fraudulent purpose—either to create a false impression that the deceased had actually been poisoned, although his death had been correctly attributed to other and natural causes, or else in a case of actual criminal poisoning, where the guilty criminal has sought to cover up his work, and escape detection, by injecting the same poison into the body of his dead victim (for example, a solution of arsenic, or of corrosive sublimate) under the specious guise of embalming or preserving the body; but, at the same time, armed with the guilty knowledge that the poisonous liquid thus introduced would speedily be diffused through the different organs of the body, and would thus render abortive the subsequent attempts of the toxicologist to prove that the death had been caused by poison. Cases of this latter character have more than once been brought to my notice.

The bare fact that a dead body may imbibe a poison was first clearly demonstrated by Orfila, more than sixty years ago, by experiments made first on the bodies of the lower animals, and then upon the human body. He found that when a mineral solution was injected into the stomach or rectum after death, it was speedily diffused throughout the various viscera; the completeness of the diffusion and the number of the organs affected being always in proportion to the strength of the poisonous solution, and the length of the interval between the injection and the examination of the body. This is precisely what we might have expected.

Orfila also distinctly exposed the fallacy of the prevalent popular idea that a dead human body might possibly absorb the poison if buried for a long time in an arsenical soil. Now, as this is a question of some medico-legal importance, I will dwell upon it for a moment. It is well known that the soil of certain cemeteries contains traces of arsenic—more frequently in Europe than in this country. Hence it occasionally happens in a trial for alleged arsenical poisoning, where the evidence against the accused is chiefly of a chemical character, that the counsel for the prisoner, driven to extremities, will take refuge in the now exploded idea that the arsenic found in the body of the deceased was really due to absorption from the soil of the cemetery, more especially if the body had been interred for many years, so as to have given time for the coffin to fall to pieces, and the remains to come into actual contact with the poisoned soil.

But, as I have just observed, Orfila distinctly proved the fallacy of this notion. He showed by experiments that imbibition from an arsenical soil can never happen, and for the very sufficient reason that the arsenic existing in the soil of cemeteries is never in a soluble state, and consequently could never be absorbed. This opinion of Orfila is now universally adopted by toxicologists; and I believe that no well-instructed criminal lawyer of the present day would hazard his reputation by urging such a plea before a court and jury.

The experiments of Orfila already alluded to, to prove the *fact* of the imbibition of poison after death, have since been frequently repeated by other investigators, among whom is myself. Some years ago I instituted a series of experiments at the University of Pennsylvania, or rather I supervised those made at my suggestion by Dr. George McCracken, of this city, a member of my class. My paper, containing the results of these experiments was read before the College of Physicians of Philadelphia, and was published in its *Transactions*, 1877.

The animals whose bodies were employed were cats and dogs. The poisons used were solutions of arsenious acid, corrosive sublimate, and tartar emetic. These were injected through a tube, into the stomach, and the bodies were then buried in the earth for periods varying from three to seven weeks. On subsequent examination the clearest possible proofs of the diffusion of the poisons into adjacent viscera were afforded; they were detected in the lungs, diaphragm, spleen, kidney, heart, and urinary bladder, by chemical analysis; and also rendered visible to the eye by the deposit of characteristic colored spots of the respective sulphides in the peritoneum and mesentery—*yellow* in the case of arsenic, *orange* in that of antimony, and *black* in that of mercury. These experiments also confirmed another fact mentioned by Orfila, namely, that this post-mortem imbibition is progressive, depending upon the length of time elapsing between the injection of the poison and the examination of the body.

I regret to say that at this time no examination was made by me of the brain and spinal cord; because I did not, at that date, believe that a poison thus imbedded could possibly pass through so many intervening tissues, and at last penetrate the thick bony casements enclosing the brain and spinal marrow. Moreover, at that time no experiments had been made to ascertain this fact; and I then even ventured to express the opinion that such a result could hardly be expected; so that the discovery of a poison in the brain or spinal cord after death might be regarded as pretty sure proof of ante-mortem poisoning, whilst its detection in any of the other organs could not be received as such incontrovertible evidence, inasmuch as they might possibly have become contaminated by a post-mortem imbibition.

But certain experiments conducted subsequently to my own, especially those by Dr. George B. Miller, of this city, another member of my University class, and by Professor V. C. Vaughan, of the University of Michigan, and others, seem very positively to establish the fact that *arsenic* certainly (and other poisons presumably) does really reach both the brain and spinal cord after previous injection into the stomach of a dead animal. I have as yet no data to prove that this result would follow the injection of the poison into the rectum, or into the abdomen or thorax, but I have very little doubt that such would be the case.

Thus it has happened that this lately ascertained fact, although deeply interesting from a scientific point of view, proves to be unfortunate in another respect, inasmuch as it destroys completely what otherwise would have been a most valuable and trusty means of diagnosis.

We all know that it is much more difficult for the toxicologist to detect the poisonous alkaloids—strychnine, morphine, nicotine, etc.—in the organs after death, in a case of genuine ante-mortem poisoning, than it is to discover the mineral poisons, arsenic, mercury, antimony, lead etc. Of course, the difficulty would be proportionately increased in the attempt to detect these alkaloids in the viscera when injected into the body post mortem. So far as I am aware, no experiments in this line have been made, or, at least, have not yet been published, until those recently performed by my friend, Dr. Miller, whom I have already quoted. He has within the past few years made a series of investigations to test this fact, more particularly with the alkaloid strychnine, taking it as a type of the alkaloids. He has kindly exhibited to me the results of his experiments, which were performed upon the dead bodies of rabbits. A strong solution of strychnine in water (ten grains to one fluid-ounce) was carefully injected into the stomach by means of a tube passing through an incision made in the œsophagus, this mode of injecting being adopted in order to avoid any possibility of the poison regurgitating from the syringe through the posterior nares, and thence through the sphenoid and ethmoid cells directly into the brain. The animals were examined at various periods after interment, varying from twelve days to several weeks; and, as the result, Dr. Miller feels perfectly sure (and I can see no reason to doubt the accuracy of his results) that he has detected strychnine imbibed post-mortem in the *liver*, *spinal cord*, and the *urine* remaining in the bladder. In the brain, however, he has not, thus far, succeeded in finding it.

I think, then, that we may regard it as an established fact that *all* poisons—organic as well as mineral—at least all those susceptible of solution, do undergo the process of imbibition or transfusion into the various organs and tissues of a dead body; and, further, that in every criminal trial for poisoning this important fact should always be kept in view for the benefit of the accused, and that in every toxicological examination of a dead body the possibility of the post-mortem transfusion should never be forgotten.

We are now naturally led to consider the important question whether there is any means by which, in the case of death from alleged criminal poisoning, we can positively discriminate between the poison administered before death and that which may have been injected into the body designedly after death. This is, of course, a question of momentous importance. Several cases have come to my knowledge where the whole question of the guilt or innocence of the accused hinged on this very point. For instance, an old man has died from some ordinary disease, but with no symptoms leading to the suspicion of poisoning. Previous to his death he had made a will, bequeathing the bulk of his property to his housekeeper, whom he had lately married, and leaving his children comparatively penniless. Now, these disappointed heirs, restrained by no moral principle, might determine to thwart this unnatural act of their father, and to effect their wicked purpose they hesitate not to hatch a most diabolical scheme, viz., to charge the woman with the horrid crime of poisoning her husband for the purpose of obtaining his money. Armed with the fatal knowledge of the post-mortem imbibition of poisons, they secretly gain access to the buried body of their parent, and with no great difficulty succeed in introducing a solution of arsenic into the stomach, and, after quietly waiting for a few weeks or months, they begin to whisper the suspicion that there was a mistake as to the cause of the old man's death and that there was a strong suspicion that he had been poisoned. This allegation would be rendered the stronger if any of the symptoms at the time of his death had happened to resemble those of an irritant poison. Very soon the tongues of gossip and slander would spread the flame of suspicion throughout the community, until it reached the ears of justice, when, forthwith, the exhumation of the body and a judicial examination follow. As the result of the latter, the presence of the dreaded arsenic is discovered in the different viscera of the body. And what follows? Sad to relate, the arrest and possible conviction of a perfectly innocent woman, around whom has been insidiously woven a net of suspicious "circumstances," through the meshes of which it seems almost impossible for her to escape. This is no mere fancy sketch; its counterpart is believed to have occurred more than once.

But take another illustration, of an altogether different nature, and one much more likely to occur. A husband, prompted by some base motive, determines to get rid of his wife by poison. It is administered to her secretly, and in small doses, so as gradually but surely to accomplish the desired end. The physician who may be called in, as well as the attendants upon the sick woman, may be entirely deceived as to the real condition of things, and the poor victim is treated for some supposed disease, until death ensues. Immediately afterward the designing husband, with a full knowledge of the consequences, and under the specious pretence of embalming the body of his wife, injects into the abdomen a strong arsenical solution—such as is often used by undertakers. Or, perhaps, he may even employ a physician or an undertaker to perform the job. The body is then duly buried, and the guilty husband hopes that his villainy has been covered up; for, even if subsequently suspicion should be excited, and the wife's body should be disinterred and examined for poison, its detection in the different organs and viscera by the toxicologist might, as we have seen, be readily ascribed to its post-mortem imbibition, resulting from the embalming liquid. Again the important question presents itself—how are we to discriminate in such awfully intricate cases, in which the innocent may be made to suffer and the guilty may escape free? I answer, not by chemistry merely, since the results of a chemical analysis must necessarily be the same in both cases.

There are some considerations, however, which may possibly tend to throw light upon this confessedly intricate subject. As now understood, in every case of death from actual poison a careful toxicological examination of the body will usually reveal the remains of the poison which has been absorbed and retained by the different viscera, more especially by the liver and kidneys. In any such case, it is noted that the interior of the organ contains quite as much of the poison as the exterior, because it has been deposited there by the capillary blood-vessels during life; whereas, in a case where the organ has been contaminated by a post-mortem imbibition of a poison, the exterior of the organ should indicate a larger amount than the interior, and for a reason obvious on a moment's consideration. This may be regarded as one factor of the diagnosis, although perhaps not a very strong one.

Another circumstance worthy of greater consideration, although I believe it has never yet been thoroughly worked out, is that there is, probably a histological and pathological change wrought in the tissues and organs impregnated with certain poisons, and visible only under the microscope. This alteration would be likely to occur only as the result of absorption of the poison into the circulation during life, and not from mere physical transudation after death. It is now well known that in cases of slow poisoning by arsenic, lead, and other metals, certain neurotic symptoms are developed, accompanied by well-marked pathological lesions in the great nerve centres. In an address by Dr. Formad, of Philadelphia, before the International Congress of Medical Jurisprudence, lately convened in New York, upon this very topic, the opinion was expressed that there is always a very decided histological and pathological alteration in the mucous membrane of the stomach (he does not mention any other organ) produced by true arsenical poisoning, and differing from that caused by corrosive sublimate. He further asserts that "poisons introduced into the dead body do not induce any histological changes in the tissues whatever." This I believe to be the true direction in which to seek for the solution of this vexed question—the histological and pathological changes wrought in the tissues and organs by an ante-mortem poison; indeed, it may be regarded as the crucial diagnostic test, so far as it goes. We have, as yet, no evidence whatever of its application to the organic poisons.

But here I would guard against an error held by some, that any mere pathological alteration discovered in a stomach after death is sufficient, of itself, to warrant the conclusion of death by poison, and this for the simple but sufficient reason that these same pathological changes are often produced by disease. I admit there may be a very few exceptions to this view, as, for instance, in poisoning by the strong mineral acids or alkalies; but, with these exceptions, I should consider it extremely hazardous, in a capital case, to found an opinion as to death by poison *solely* on the post-mortem appearance of the stomach.

A third factor in the diagnosis is the examination of the urine *before* death in a suspected case. This examination ought never to be neglected by the attending physician. An analysis of the urine after death—especially long after death—is much less satisfactory, since it has been shown that a poison may penetrate from the stomach into the urinary bladder by a post-mortem imbibition, and so contaminate the urine.

After all, we must be compelled in such cases to fall back upon what are termed the "circumstances" of the case. One of the strongest of these circumstances is the symptoms manifested by the deceased before death. As is well known, most of the violent, irritant poisons, when taken in fatal doses, are accompanied by well-marked symptoms, which, to an experienced observer, are very suggestive. But it should be remembered, they are *merely suggestive :* they do not convey absolute *proof* by any means, because these very same symptoms are sometimes simulated by disease. Thus I have, more than once, found large quantities of arsenic in the bodies of persons who were supposed to have died from cholera morbus, and who had been treated by physicians for this disease, and the cause of their deaths so certified by the physician, so closely do the symptoms in both conditions resemble each other. But if the poison has been administered in small doses at intervals, then the symptoms are altogether different, and they may very readily be mistaken for those of some insidious disease.

And, finally, under this head, I should not omit to allude to those "circumstances" which, when they do occur, constitute a most important link in the chain of evidence : such as the existence of a strong impelling motive to the deed, on the part of the accused, or of some interest he may have had in the death of his victim—as, for example, the obtaining of a life-insurance claim. Likewise, the proofs of the purchase and actual possession by the accused of the very poison discovered in the body of the deceased; and, possibly, also the discovery of some implements belonging to the accused, such as, it might even happen to be, the very syringe and tube employed by him to inject the poisonous liquid after death, with enough of the remains of this liquid still adherent to the implements to be recognized by the toxicologist.

All these and many other such "circumstances" constitute invaluable material which an astute and judicious counsel will not fail to work up into most important testimony, either for or against the prisoner.

From what I have said, I think all must be impressed with the importance of the subject of the *post-mortem imbibition of poisons*—especially to the toxicologist and the legal physician. My own mind has been especially directed to it in its relation to the unauthorized and indiscriminate use of poisonous mineral liquids, injected into the bodies of the dead, for the purpose of embalming or preserving these bodies, by several cases lately brought to my notice which occurred in neighboring States, and in which the ends of justice were completely foiled by this pernicions practice. In two of these cases the poisonous compound was injected soon after death into the abdominal cavity by an undertaker, apparently without any authority, or orders, but solely to follow out his own ideas, or to carry out his usual custom. Now, in both these cases, there was a strong suspicion of death by poisoning. I would ask, does not an undertaker by such unauthorized action, although perfectly innocent of any guitly connivance, render himself liable to a very strong suspicion of such guilty complicity? And might not even an innocent physician, performing this operation, in kind compliance with the request of the real prisoner and, of course, without any suspicion of the true cause of death, thus subject himself to the terrible consequences of being accessory to the crime? The third case which was referred to me—strange to say, from the same State—was that of the wife of a clergyman, who had died under strong suspicions of poisoning by arsenic. The husband, very soon after the death, caused an arsenical solution to be injected into his wife's body ostensibly with a view of preserving, it, but doubtless with the intention of thwarting the ends of justise by thus rendering the proof of poisoning impossible. The case was rendered stronger by the fact that this clerical Bluebeard had previously lost several wives, two of whom under precisely similar circumstances. The case, I learn, is still held under advisement, as the husband was not as yet under arrest, in consequence of certain family reasons.

Now, with a full knowledge of the above cases, and impressed with the danger and risk, incurred by the community, of this indiscriminate and unauthorized injection of dead bodies by undertakers and others, I some weeks ago sent a communication to our Board of Health, drawing their attention to the danger of allowing such indiscriminate embalming of the dead without proper authority, remarking, however, that I am not aware of any such cases occuring in this city, but that I knew of them elsewhere. My communication was intended to be merely precautionary: to call attention to an evil that did exist elsewhere, and which it was desirable to prevent getting a foothold here. I suggested the passage of an ordinance forbidding any undertaker, physician, or other person whatever, injecting any poisonous or embalming fluid into a dead human body, without proper authority, except for the preservation of subjects for dissection in medical colleges. I was glad to learn from a somewhat vigorous protest from one of our undertakers that such an indiscriminate use of embalming fluids was *not* common in this city. Still, the passage of such an ordinance might certainly be productive of good, since I have the most positive evidence that the practice alluded to is very common in other parts of our country.

RENAL DISEASE OF SCARLATINA.—By W. M. Welch, M.D., Physician to the Hospital for Infectious Diseases, of Philadelphia.

Of the various complications and sequelæ of scarlatina, there are perhaps none of more common occurence—certainly none of greater importance—than the kidney affections. In studying these diseases I find it convenient to follow Friedlaender's division of them, which is as follows:

1. The initial or febrile albuminuria.
2. Changes in the kidneys of a septic character.
3. Post-scarlatinal nephritis.

Opportunites for examining the kidneys *post mortem* in the first form of the disease, or during the initial albuminuria, are not very numerous. Death, however, does sometimes occur at this stage of scarlet fever, either from accident or some concurrent disease, and in such cases the kidneys show but little anatomical changes—only such, perhaps, as are due to changes in the nutrition of the epithelium. The microscope reveals simply congested capillaries, and slight extravasations of leucocytes around them, coagulated albumen in the tubules, and an increase of the nuclear elements in the glomeruli. In the very malignant cases there is, of course, more evidence of disease—though even here, as a rule, no gross structural changes exist.

The cause of the initial albuminuria is generally thought to be some changed pressure in the capillaries of the kidneys incident to the febrile state. It is therefore spoken of as simply febrile albuminuria, and is believed by many to have only the same significance as when it occurs in typhoid fever, pneumonia, and other febrile affections. But as it is much more frequently met with in scarlatina than in other febrile diseases, I think it not improbable that it may be consequent upon some direct action of the scarlatinous poison on the kidneys.

This form of albuminuria makes its appearance during the first few days of the disease. It is much more likely to be seen when the temperature runs high—say from 103° to 105° F.—although it is not impossible for it to appear when the temperature runs lower. It usually disappears in a few days; but it may continue longer, and even assume an aggravated form during the decline of the disease. In malignant and rapidly fatal cases it is generally though not invariably present. Bloody or smoky urine is not seen at this early stage of scarlatina, except, perhaps, in rare instances, or very malignant cases.

In regard to the second form of renal disease, or that which results from changes in the kidneys of a septic character, the pathological conditions are more apparent. However, among the patients who die at an early period of this septic process, the pathological changes in the kidneys may not be markedly different from those seen in cases of initial albuminuria; but among those dying later—say as late as the second or third week of scarlatina—the kidneys are often large, flabby, and generally pale, though they may be mottled by injected capillary vessels, and sometimes by foci of extravasated blood. The pyramids show the same injected appearance, and, at their base, minute abcesses or cheesy spots are sometimes seen. When examined under the microscope leucocytes appear in great abundance surrounding the capillary vessels, and especially the glomeruli. The epithelium, of course, is markedly changed. The mottled appearance of the kidneys shows that the inflammatory process in this form of the disease begins at, and often is limited to, a number of points, instead of involving the whole organ at once, as in post-scarlatinal nephritis. The kidneys are rarely entirely disabled, as in the latter affection; and when death occurs, it is generally in consequence of septicæmia, rather than of the nephritis.

This form of renal disease is always preceded by angina of a foul, sloughy character, and by suppurating lymphatic glands and cellulitis. Suppuration of the middle ear may also precede or attend it. The quantity of albumen in the urine may be variable, though it is rarely as abundant as in the post-scarlatinal variety. Blood also may be present, but never in large qnantity. There is not apt to be more than barely sufficient to give a slight tinge to the urine. Careful testings, however, show that it is *not infrequently* present, even when the eye fails to detect it. Casts and epithelium are present in only exceptional cases. The quantity of urine is generally not greatly diminished, and hence œdema, or much puffiness about the face, is not common.

The kidney lesion in this form of albuminuria is only a part of a general septicæmic condition, and death, in the majority of cases, occurs in consequence of the latter. Sometimes, however, the inflammatory process in the kidneys progresses to a general nephritis; the organs then may become choked, the urine suppressed, and death result from uræmia.

The third form of albuminuria is by far the most common, as well as the most important, and is the result of general nephritis of an acute character. It does not make its appearance until the fever has subsided, the eruption disappeared, desquamation begun, and convalesence seemingly fairly established. This form of nephritis has been characterized by various names, such as "tubal," "desquamative," "catarrhal," etc., each indicating some peculiar notion concerning its pathology. The term post-scarlatinal nephritis is now more generally preferred, because it indicates the period of scarlet fever at which this form of kidney affection occurs, without committing to any notion as to the nature of the lesion.

An examination of the kidneys of patients who have died of this form of renal disease shows that they are enlarged and hyperæmic, and present evidence of general inflammatory action. The capsule may be readily stripped off, the cortical substance is found thickened, and sometimes softened, and the glomeruli present evidence of being intensely implicated. A cut section examined microscopically shows the capillaries dilated, the glomeruli enlarged and inflamed, with proliferation and desquamation of their epithelium, hyaline degeneration of the minute arteries, and also of the capillaries of the Malpighian bodies, causing a distinct narrowing or obliteration of these vessels. Anuria and uræmia—symptoms frequently observed in this form of disease—may be attributed to either compression of the vessels forming the glomeruli, or to the changed state of the arterioles. Klein, I believe, attributes these symptoms to the latter.

When post-scarlatinal nephritis occurs, the earlier symptoms usually make their appearance during the third week of scarlatina. This complication rarely occurs outside the limits of the fourteenth to the twenty-sixth day of the disease. Some authorities speak of cases in which the nephritis begins at a later period than the twenty-sixth day; but such instances, I am sure, are exceptional. It is not apt to occur earlier than the fourteenth day, except when the septicæmic variety of albuminuria runs into the post-scarlatinal, which, indeed, is not uncommon in the septicæmic class of cases. In such cases the albumen already present in the urine suddenly increases to a much larger amount. The other symptoms may or may not be exaggerated, but a distinguishing feature of this third variety of albuminuria is that the albumen is always present in much larger quantity than in either of the other two varieties.

Concerning the etiology of this disease, there is, I think, scarcely room for doubt that the kidneys are rendered predisposed to inflammatory action by reason of their irritated state, incident to separating the scarlatinous poison from the blood. The kidneys, after scarlet fever, have been not inaptly compared to the lungs after measles, as in either case inflammation of a fibrinous or croupous character is liable to supervene. As pneumonia may follow in mild cases of measles, so also nephritis may occur after mild attacks of scarlet fever. While patients with mild attacks of the fever are less predisposed to kidney complication than those who pass through a severe form of the disease, yet the former, through the want of proper care, or on account of too early exposure, not unfrequently suffer from this complication. The first case of post-scarlatinal nephritis I ever saw followed an attack of this character. It occured as long ago as 1861, and although I have no notes on the case, it made such a deep impression on my mind at the time that I shall never forget it. The circumstances were these: I was called to see a child about one year old, and found him suffering from scarlatina. The eruption was, at the time, out abundantly, and all other symptoms were well marked. My attention was called at the same time to another child, aged about three or four years, who was sitting on the floor playing with his toys. The appearance of this child was very peculiar; he looked like an excessively fat boy, so great was the anasarca. His parents informed me that, although he had been a little indisposed, the child was not at any time deemed sufficiently ill to require the services of a physician, and so none was called. The child, therefore, received no care nor treatment. On my visit the next morning I found crape on the door, and on entering the house was surprised to learn that the anasarcous child who the day before was playing with his toys, had suddenly died during the night.

Why nephritis so frequently occurs in the declining period of scarlet fever, or during the desquamative stage, instead of earlier in the disease, is not fully understood. A disturbance of the function of the skin has been assigned as the cause, and, in a certain way, this may have something to do with the disease. There is no doubt that the renal affection, in many instances, is plainly attributable to exposure, or to currents of cold air. Chilling the surface of the body tends to check cutaneous transpiration, and thus additional work is thrown on the kidneys, which are already in a state of intense irritation, and therefore markedly predisposed to take on inflammatory action. If in mild cases of scarlatina the kidneys suffer irritation in separating the poison from the blood, in severe cases—those marked by prolonged fever, by much exudation about the fauces, and by glandular inflammation—there must be still greater irritation, for among these the worst and most fatal cases of nephritis are found. It quite frequently happens, however, that severe cases escape the malady, while mild ones are attacked. The explanation appears very plain: It is that severe attacks of scarlet fever require the patients to be kept in bed a suitable time, and in a warm room for three or four weeks, or longer, by which time the most liable period for the development of renal disease has passed; whereas, mild cases are more carelessly treated, and not infrequently exposed very freely to all kinds of weather at that period of the disease when this complication, or sequela, is most liable to appear.

In the majoriry of cases of post-scarlatinal nephritis, the earliest symptoms observed are slight pallor and puffiness about the face. A little investigation will then generally reveal the fact that the patient has slight headache, accompanied by languor, loss of appetite and strength, together with pain in the lumbar region. An examination of the urine usually shows that it is diminished in quantity, and contains some albumen. Ashby says he has often noticed a slight pallor or puffiness of the face in children who had no albuminuria, but in whom it appeared a few days later.

The quantity of albumen is small at first, but increases as the disease progresses, until it reaches, not infrequently, the proportion of one-third, one-half, two-thirds, or even more, of the bulk of the urine. In some cases, indeed, the albumen is so great that the urine is set solid by boiling. In almost all cases there is, as the disease progresses, a gradual diminution of the amount of urine passed, and its specific gravity is usually light—varying from 1010 to 1020; but the presence of a very large quantity of albumen may raise the specific gravity to normal, or even higher. The ammount of urea excreted is also diminished. The urine, on cooling, generally throws down a dense deposit, and it often presents a smoky appearance, showing that it contains a little blood, or it may be red and decidedly bloody. Examined microscopicolly, it shows the presence of blood-corpuscles, epithelial cells, and hyaline or granular casts, sometimes both.

In consequence of the diminished renal secretion and the altered state of the blood, transudation of serum from the blood vessels takes place, giving rise to anasarca, which, besides the puffiness of the face already alluded to, shows itself quite early in the feet and ankles. If not checked by treatment, it is liable to extend to all parts of the body, even to the scrotum. When excessive, the patient presents, as in my first case, the appearance of being extremely fat. The dropsy is not always limited to the cellular tissue underneath the skin, but it may also assume the form of œdema of some internal organ, or effusion into a serous cavity. In order of sequence, œdema of the lungs is most frequent; next to this there is found effusion into the pleura, the peritoneum, the pericardium, the encephalon, and in rare instances œdema of the glottis may occur. The danger from the dropsy itself depends entirely on its location. While anasarca or ascites is scarcely ever fatal, œdema of the lungs or the glottis, or intracranial, pericardial, or even pleural effusions always give rise to alarming symptoms, and sometimes prove rapidly fatal.

The diminished amount of urine passed is sometimes the first symptom to call attention to the renal complication. As the disease advances, the amount grows less and less, until, in extreme cases, there is complete anuria. Even the urine that is voided does not as a rule contain the normal proportion of urea. In consequence of all this we may expect to find, as we frequently do, symptoms of uræmic poisoning. Among the earlier of these symptoms are headache, nausea and vomiting. Following these are somnolence, threatening coma, and convulsions. Although these symptoms are unquestionably serious, they do not necessarily betoken a fatal termination. Under prompt and appropriate treatment many patients with severe convulsions, and even in a condition approaching coma, have been so benefited in a few days as to become fully convalescent. On the other hand, not infrequently, the eclampsia continues in spite of all treatment, and the case ends in a fatal coma. It should be borne in mind that death may result in the same way from intracranial effusion. Some care is therefore often necessary to differentiate between these two conditions.

The fever in post-scarlatinal nephritis may vary considerably. Frequently there is no elevation of temperature at all. Sometimes it is normal in the mornings and shoots up a degree or two in the evenings. Not infrequently the outset of the disease is marked by a distinct elevation of temperature, which quickly subsides again to normal. Occasionally, in the midst of a normal or slightly elevated temperature, there are exacerbations of short duration. Only rarely does the temperature remain high continuously, or even for any considerable length of time. It has been noticed that an exacerbation of the temperature is sometimes followed by the passage of bloody urine; thus indicating that there had been a temporary congestion of the kidneys which was relieved by the transudation of blood into the urine. This condition may be reproduced from time to time, and at those periods when the blood in the urine is markedly diminished, or entirely absent, the temperature falls to normal. In uræmia it is generally sub-normal.

There is a notable peculiarity about the pulse in post-scarlatinal nephritis. While it is generally very rapid in the early stage of scarlatina, it is now found considerably retarded, often slower, indeed, than in health, and sometimes irregular. It may also remain slow even when there is considerable elevation of temperature. A pulse of sixty-eight in a child is not uncommon. It may, however, be accelerated by some accidental course, or by the approach of death.

Affections of the eye are sometimes met with in this form of nephritis. Some writers have described a special form of retinitis, which is said to arise quickly and cause various degrees of loss of sight, without producing total blindnees. Although the course of this affection is spoken of as protracted, the prognosis is considered favorable. This form of retinal disease is believed to be something quite different from that which so often occurs in the course of chronic renal disorder, and which is characterized by gross structural changes in the retina of a permanent nature. The affection of the eye most liable to occur in post-scarlatinal nephritis is *amaurosis uræmica.* This is an acute, suddenly-appearing symptom sometimes met with in uræmic poisoning, and must therefore be reckoned amongst the group of symptoms of that disorder. The amaurosis is happily transitory, disappearing often as quickly as it comes. On arousing from a state of unconsciousness, the patient sometimes finds himself entirely blind; this may continue for two or three days, but rarely lasts longer than ten days. The ophthalmoscope fails to reveal, so far as I know, any pathological alterations of the visual organ which could account for the sudden blindness. It has been suggested that the cause may lie in simple œdema of the retina, which is not improbable.

The duration of post-scarlatinal nephritis varies according to its intensity. In the mildest cases the symptoms may all disappear in two or three days. In a fairly marked case the albuminuria may last for two or three weeks, disappearing very gradually. Even after the disappearance of the last trace of albuminuria, some other abnormal products frequently continue in the urine for a long time. The form of nephritis characterized by anasarca and dropsical effusions may last from one to two or three months, and sometimes even longer. With the disappearance of the dropsy, the albumen in the urine usually diminishes, though it often continues to be present in a small quantity for a long time, even after the patient believes that he has fully recovered. Occasionally the nephritis becomes chronic; or, months after the apparent recovery, the patient, from exposure, or some other cause, is seized with a return of well-marked albuminuria and possible dropsy, and may die of chronic Bright's disease. When death results from the acute form of the disease, it may ensue in the first, though more frequently not until the second or third week.

Treatment.—But little attention need be given to the first form of albuminuria. If it be, as is claimed, merely febrile albuminuria, it will disappear with the fall of temperature. In the second form of albuminuria, or that depending on septic changes in the kidneys, the treatment should be aimed more especially at the local and systemic conditions which give rise to the renal disorder. Fortunately, in this form of the disease the function of the kidneys is but little disturbed; it is only when general nephritis supervenes that their secreting power is seriously affected. Therefore, in the third form of the disease or post-scarlatinal nephritis, treatment is always required, and often that of the most prompt and active character is demanded.

In the first place, it is highly important that this complication or sequela should be prevented. Therefore, during convalescence from scarlet fever, the patient should be properly clothed and kept in-doors, and in a uniform temperature for three or four weeks after the fever has disappeared, or until desquamation has entirely ceased and the new epidermis acquired sufficient thickness to afford proper protection. The urine should be examined for albumen every few days, and as soon as any is discovered the patient should be put to bed in a room having a uniform temperature of 72° to 75° F. The diet should be liquid; there is nothing better than milk. An effort should be made at once to relieve the hyperæmia of the kidneys. For this purpose warm water baths, at a temperature of 98 to 100°, continued from fifteen to twenty minutes, may be used; after which the patient should be returned to the bed and covered with blankets.

Purgatives may be used early, and even repeated later on with advantage. They should be selected from that class which produces watery stools. Perhaps one of the safest purgatives, and at the same time most useful, is the *pulvis jalapæ compositus.* This may be given in doses of ten grains to a child five years old, and repeated as circumstances may require. Its action may be increased by allowing the child to drink freely of a solution of bi-tartrate of potassa—say in the proportion of a teaspoonful of the salt to a tumblerful of water. It should be borne in mind that patients in this condition are apt to be anæmic, and therefore purgation should not be carried to excess.

Drugs producing diaphoresis should also be employed—such as citrate of potassium, acetate of ammonium or potassium, and sweet spirits of nitre. When the urine is greatly diminished in quantity and serious symptoms threatening, there is no drug so efficient as pilocarpine. This may be administered to children from two to six years of age, in doses varying from the one-fortieth to one-twentieth of a grain, and repeated every six hours. In case the stomach will not tolerate it, it may be employed hypodermically—say in doses of one-twentieth of a grain to a child of five years. It acts both as a diaphoretic and diuretic, and it also increases the salivary secretion. Any depressing effect liable to be produced by it may be guarded against by the simultaneous administration of stimulants.

When there is great anasarca and difficult respiration, with the urinary secretion suppressed or greatly diminished, I have found no agent so useful as hot air baths. Each bath should be continued for about one hour, and may be repeated once or twice daily, according to the urgency of the case. When properly used, these baths are far more certain to produce not only diaphoresis, but profuse diaphoresis than any drug or agent that I have ever employed. I have seen patients gasping for breath, and whose lives seemed in imminent danger, relieved of this distressing symptom by one or two such baths.

Diuretics of not too stimulating a character are always useful in the latter stage of the disease, and they may indeed often be employed with advantage in the early stage. Digitalis is one of the most serviceable, and it may be employed from the very commencement of the malady. I think the best way of administering this drug is in the form of an infusion. It may be given in combination with acetate of potassium, as follows:

℞.—Potassii acetatis	ʒij.
Infus. digitalis	f℥ iij.

M. Sig.—Teaspoonful every three hours to a child of five years.

Meigs and Pepper recommend the following mixture:

℞.—Potassii bitart.	ʒj.
Sp. juniper. comp	fʒ ij.
Sp. æth. nitros	fʒ j.
Tr. digitalis	♏ xv.
Syrupi	fʒ v.
Aquæ	f℥ ij.

M. Sig.—Teaspoonful every two hours to a child from two to four years of age.

Local measures may be employed over the region of the kidneys. Leeches have been used; but as there is always a marked tendency to anæmia, leeching is only admissible in robust patients. Dry-cupping, however, may be of service. Poultices are useful, and may be applied in any case. I am in the habit of using ground flaxseed and mustard, in the proportion of fifteen tablespoonfuls of the former to one of the latter. In this way the poultice is made somewhat more irritating.

For the uræmic convulsions, I know of nothing better than the warm water bath, bromide of potassium, or hydrate of chloral. The bromide should be given in large doses. To a child three years of age, five grains may be administered every fifteen minutes until two or three doses shall have been given, provided the convulsive movements continue that long; afterwards the dose may be repeated at longer intervals. Hydrate of chloral is doubtless more efficient. Five grains of this drug introduced into the rectum of a child from three to five years of age, will generally control the convulsive movements within fifteen or twenty minutes. Inhalation of chloroform has been recommended; it doubtless will give temporary relief. But whatever antispasmodics may be employed, it is highly important that the efforts to relieve the choked kidneys should be continued at the same time.

After the acute stage of the renal disease has abated, ferruginous tonics are found of great service. There are two preparations to which I am very partial. One is a solution of citrate of iron and ammonia, with sometimes the addition of a little carbonate of ammonia; and the other is Basham's mixture.

COMPRESSION OF THE BRAIN AND SPINAL CORD.—By Dr. Adamkiewicz (Vienna).

Formerly it was assumed as an axiom, that brain-tissue was practically incompressible, and the symptoms caused by increase of the intracranial pressure were supposed to be due to cerebral anæmia. Experiments on animals, however, prove that these suppositions are wrong. For the volume of the brain can be diminished by pressure, and this diminution is not due to narrowing of the blood vessels, but to the displacement of fluid from the cerebral tissue into the subarachnoid space, and thence into the cord and the lymphatics and veins of the neck. When the pressure is below a certain limit, but yet sufficient to materially lessen the bulk of the brain, the cerebral blood-vessels actually dilate. The dilated vessels supply sufficient nutriment to the compressed tissue, and there is no functional disorders of the parts of the brain involved. When the pressure is below the limit at which functional disorders appear, our author considers the compression to be of the first degree. In compression of the third degree there are visible breaches of continuity; in other words, the brain is crushed or bruised. Between compression which causes no functional disorders and compression which produces structural lesions, lies compression of the second degree, in which the damage done to the tissues is said to be molecular or dynamical, because it cannot be detected by the microscope. While compression of the second degree lasts, there are pronounced functional disorders, but complete functional restitution follows on the removal of the compressing force. Adamkeiwicz found in animals that when the compression just attained to the second degree, irregular attacks of clonic spasms of the opposite side of the face and opposite limbs (contralateral hemiclonus) appeared. As the pressure was increased, hemispasm was replaced by hemiplegia, muscular contraction and exaggerated tendon reflexes. Paraplegia followed hemiplegia, and spastic tremors and paralytic trembling were observed as the compression approached and passed into the third degree. In man, as is well known, cerebral tumors may remain latent, or give rise to hemispasm, hemiplegia, paraplegia and spastic phenomena. In our author's terminology, cerebral tumors cause compression of the first and second degree. Adamkiewicz has cited elsewhere cases to illustrate the disappearance of hemispasm and hemiplegia when the tumor or other cause of increased intracranial pressure was removed. In the following extraordinary case he was enabled to observe the immediate effects of compression on the human brain.

A young countryman had a large soft sarcoma removed from the top of his head. The tumor had eaten through the bone, and by the operation the dura mater was exposed over an area of twelve to eight centimetres. The hole in the skull was filled with a firm tampon, and on this a board was placed to support weights. The greater part of the tampon was forced within the cranium, but no symptoms were produced by placing a weight of seven kilogrammes on the board.

Hence, in man, as in animals, when the brain is compressed to a certain degree, its volume is diminished, but no functional reaction ensues. Other observations of the author confirm this result. To return to the case under consideration : A few weeks after the first operation, a second was undertaken to remove the tissues infiltrated by the growth. The longitudinal sinus was opened, and great pressure had to be applied to stop the hæmorrhage. As long as the patient remained fully under the anæsthetic all that was noticed was that the breathing was stertorous and irregular. But half an hour after the application of the compress paroxysmal attacks of screaming set in. A hemispasm accompanied each screaming fit. The hemispasm was confined to the left arm and leg, and consisted of rapid flexions. The closed fist was drawn toward the forearm and the forearm hurled toward the upper arm. In the lower limb the movements were confined to the hip and knee-joints. Each fit lasted two or three seconds, and the interval between two consecutive fits was four or five minutes. The patient died about an hour after the operation. At the autopsy it was found that the superior parietal lobules had been injured by the surgeon's knife, and that the upper third of the ascending frontal convolution and posterior part of the first frontal on the right side were so flattened that the furrows were completely obliterated. The corresponding region on the left side was flattened, but not to the same degree or extent. Adamkiewicz argues that the flattening was due to the pressure of the compress, and the hemispasm was caused by the compression of the upper right motor region in front of the fissure of Rolando. He concludes that there are three degrees of compression of the human brain, characterized by the same phenomena which he observed in his experiments on animals.

Compression of the spinal cord has been supposed to cause myelitis by producing anæmia, and consequently disorders of nutrition and necrosis. But Adamkiewicz finds that this fundamental premise of the doctrine of the so-called compression myelitis is false. He shows that in man tumors may alter the shape and lessen the volume of portions of the cord without causing any functional disturbance, and, therefore, without materially interfering with the nutrition of the compressed tissue. In rabbits he introduced slips of laminaria between the dura mater and wall of the spinal canal, and thereby not only altered the outline and diminished the volume of the adjacent parts of the cord, but greatly deflected the paths of the nerve-fibres. In spite of this, the normal functions of the cord were performed for months. Hence, compression of the cord, which stops short of bruising, causes neither anæmia nor inflammation. Myelitis associated with compression is not due to pressure, but to the simultaneous presence of irritants, such as the products of caries of the vertebræ. A case of spinal curvature is related as an example of compression of the second degree. The lower cervical and upper dorsal regions were involved in the curvature, and the symptoms were paraplegia and slight vaso-motor disorders. As there were no indications of caries, no affections of the sensory nerves, no changes in the reflexes or electrical reactions, nor the slightest bladder or rectal trouble, it was supposed that there was neither myelitis nor any break in the continuity of the tissue. When the patient was suspended fron the axillæ an immediate improvement in the movements of the legs took place, and the paraplegia became directly as bad as ever when the suspension was interrupted and the weight of the body no longer tended to straighten the curved column. —*Wien. Med. Woch.*, Nos. 41, 42, 43, 1888.

ESTIMATE OF THE VALUE OF ELECTRICITY IN GYNÆCOLOGY: A discussion in the Section of Obstetric Medicine and Gynæcology at the Annual Meeting of the British Medical Association, held in Leeds, August, 1889. W. S. Playfair, M.D., LL.D., F.R.C.P. (*British Medical Journal.*)

I am desirous in these notes to record, very briefly, the conclusions I have arrived at, after two years' pretty assiduous work at the subject, as to the value of electricity in gynæcology.

There are few suggested improvements in practice which have had a more curious history. On the one hand, we have had the most enthusiastic praise of this remedial agent, which has been claimed as a sort of universal panacea for all the ills which female flesh is heir to, the natural result being that it has been looked upon with doubt and suspicion; while, on the other hand, we have had the most bitter and acrimonious condemnation of it, not based on actual trial and investigation, but on mere theory and prejudices, and this view has been supported by second-hand and hearsay gossip, which would not be listened to for a moment as evidence in any court of law. The latter way of dealing with this matter we may unhesitatingly condemn as utterly valueless, and quite unworthy of serious consideration.

If merely theoretical objections could prove that a really good thing was useless, we should at this moment be without railways or telegraphs, or, to take examples from medicine only, without ovariotomy or anæsthesia; for were not all of these condemned as impracticable, or so dangerous as to render their use inadmissible?

It is also much to be regretted that many of those who have tried this treatment have done so (as could readily be proved by reference to published cases) in a most imperfect way. The necessary plant is costly and not readily procured, and conclusions have been arrived at from the use of very imperfect apparatus. I am anxious to keep Dr. Apostoli out of this communication altogether, and to judge the question from my own experience only. It is, however, impossible not to acknowledge that the attention which it has received of late is entirely owing to his example, and it is only fair to him to insist that the procedure should be carried out rigidly on the lines he has laid down. Here, again, the mistake has often been made of neglecting the precautions he deems essential, of using an intensity of current he never employs, and, in various ways, of modifying the process so as to vitiate the results, or to lead to evils that, with greater care, might have been avoided. I have no wish to minimize the possible dangers of this treatment. It is undoubtedly a very powerful agent, and, like all agents powerful for good, it is also powerful for harm. Hence, if it is rashly and indiscriminately used by those who have taken no trouble to master the *technique* of the procedure, who have not thought it worth while to procure thoroughly good and reliable apparatus, and who have not the necessary experience to guide them in selecting suitable cases for applying it to, then, beyond doubt, grave and even disastrous results will follow. This is the abuse of a thing, not its use; and it is no proof of its being without value under better conditions.

I think it is a pity also that the attention of the profession has been, to a great extent, limited to the effects claimed for negative electro-puncture in promoting the absorption of large fibro-myomata, to the exclusion of what seems to me far more useful applications of the treatment. I believe there is sufficient evidence to prove that the negative current has some influence in this direction; but I am satisfied that it will never come nearly up to the expectations that have been formed of it. Moreover, it has not been sufficiently realized that the number of non-hæmorrhagic fibroids that require interference is very small indeed. It is only when they are so situated as to produce injurious pressure symptoms, as, for example, when they are impacted in the pelvic cavity, or when they interfere with micturition or defecation or the like, that we are justified in using a remedy which has been clearly proved in some cases, which may be exceptional, but still exist, to be not in itself devoid of danger. Indeed, this is the only application of electricity which, so far as I have been able to learn, has any serious risk connected with it. There can be no question that several cases of sloughing and suppuration have followed its use, which, though often ending in cure, have endangered the life of the patient. If electro-negative puncture is used as an alternative for hysterectomy, or in the hope of avoiding that operation, then it is clearly admissible, for the risk of the two procedures cannot be for a moment compared.

Holding these views as to the application of the remedy, my experience of it in promoting the absorption of non-hæmorrhagic fibroids is comparatively small; for I have only used it in a few cases in which the urgency of the symptoms seemed to me to justify interference. I have elsewhere published one case in which a few applications of the negative current by electro-puncture reduced in size a mass of fibroid which was impacted so firmly in the pelvic cavity as to have rendered micturition impossible, and made the use of the catheter necessary for upwards of a year. After five applications of the current, at a strength of 100 milliampéres, the tumor was so reduced in size that all pressure symptoms disappeared, and it has given rise to no trouble since, although more than a year has elapsed.

Now, soon after this case was treated, Dr. Matthews Duncan and Mr. Meredith read papers on impacted fibroid of this type at the Obstetrical Society. Neither of these gentlemen even alluded to the possibility of diminishing the impacted mass by electricity. My friend Mr. Meredith, actually performed hysterectomy in his case, with great difficulty and great risk to the patient, as it is hardly necessary to point out. Now, anyone who will take the trouble to read my case and Mr. Meredith's cannot fail to see that they were as nearly identical as any two cases can be, and also that a few simple punctures, followed by no discomfort, have permanently relieved the one, while the other has been subjected to all the risks of one of the gravest and most severe of surgical operations. Had I been present at that meeting I should have then said, as I say now, that hysterectomy is not a legitimate operation in such cases until the simple procedure of electro-negative puncture has been tried and failed. Nor is the diminution in size of a fibroid a thing unreasonable to expect, or contrary to experience. There is no fact more clearly proved in gynæcology than that even very large masses of fibro-myomata occasionally spontaneously absorb and practically disappear. Several remarkable examples of this will be found in a former paper of my own, "On the Spontaneous Absorption of Fibroid Tumors," published in the tenth volume of the "Obstetrical Transactions," written long before the question of electricity had ever been heard of. This is the only class of tumor subject to these variations in size, and we are entirely ignorant of the conditions which originate these remarkable changes, except that oftentimes they seem to be connected with the effects of parturition. Is it very unreasonable to hope that we may succeed in starting by art what Nature often does spontaneously? And is it not likely enough that a powerful agent such as electricity may be able to inaugurate changes of the nature of which we are ignorant?

As a matter of fact, I think it must be conceded, from the large number of cases now published, that the use of the electrical current has at times such an influence, but I repeat that the cases justifying its use seem to me to be very few, the risk not to be inconsiderable, and, moreover, that we are as yet without any reliable facts as to the permanency of the results obtained. If, however, this procedure is now and again able to save the patient from such an operation as hysterectomy, then clearly a very considerable advance in practical therapeutics has been made.

A far safer and more generally applicable use of the remedy is that of the positive current to the uterine cavity as a hæmostatic in cases of hæmorrhagic fibroid. I have now treated a large number of cases of this kind, most (if not all) of which had already been treated by all the more ordinary methods in vain. I am as satisfied as I can be of anything medical that in this method we have a very valuable addition to our means of dealing with what is often a very intractable mischief.

I am particularly anxious to avoid making any exaggerated statements. I am justified, however, in saying that in several of my cases the treatment has saved the patient from the serious operation of removal of the uterine appendages or hysterectomy, and restored her to a measure of health and well-being quite compatible with carrying on the ordinary duties of life, which were previously impossible to her. I do not wish to burden this paper with cases, but I have elsewhere published several remarkable examples of this type. It is futile to say that in them other hæmostatics would have done as well, since, as a matter of fact, they had all been tried in vain. I am not prepared to go as far as Dr. Keith and say that the man who performs hysterectomy or oöphorectomy for a hæmorrhagic fibroid, before the hæmostatic effect of electricity has been fairly tried, is guilty of a criminal offence; but I certainly am prepared to say that I should deem him to be fairly chargeable with gross malpractice and great injustice to his patient. I should consider this equivalent to the action of a surgeon who amputated the thigh for disease of the knee before satisfying himself that the disease was curable by simpler means. Of course, the remedy is neither uniform in its action not invariable in its results. In some cases it palliates only slightly, in others much more. I have already published one case in which it seemed to me to do no good; and have since had another, in which eventually I removed the uterine appendages. The latter exception only went to prove the rule, for the tumor projected in such a way that I was practically unable to introduce the intra-uterine electrode.

Hæmorrhages occur chiefly in interstitial and submucous fibroids, projecting more or less into the uterine cavity, and they doubtless arise from lacerations of enlarged vessels in the endometrium certainly not from the tumor itself. The hæmostatic effect of the intra-uterine electrode is apparently due to its caustic action, and to its causing the mucous membrane to become dense and resistant, and, so far as I have been able to judge, it answers best when the intra-uterine electrode comes accurately into contact with every part of the endometrium. The cases in which its results are not so good are those in which either the uterine cavity is so dilated, or irregular from projection of the tumor, that the platinum sound generally used does not uniformly act upon it. To obviate this defect, carbon electrodes of various sizes have been manufactured, which I am now trying. It is reasonable to suppose that the effects of a remedy of this kind will oftentimes be only temporary—that is precisely what I should anticipate; but controlling or arresting the profuse losses, even for a time, is of itself a great gain, and by a repetition of the application the hæmorrhage may be again checked. This is, however, a matter to be tested by experience. In some of my cases, nearly two years have elapsed since they came under treatment, and I have not yet heard of any recurrence.

Beyond all question this treatment is very troublesome, and it involves a strain on the patience both of the practitioner and the patient. A considerable number of sittings is required. I believe that Dr. Keith estimates the average number at from twenty to thirty, but I myself have rarely used or required to use half that number.

This is not a brilliant procedure; it cannot compare for a moment in this respect with the large surgical operations it is intended to obviate, but it is strictly conservative; and, if it be a recognized axiom that the highest aim of the surgeon should be to prevent mutilative operations wherever it is in his power, then this method may fairly claim to have a considerable future before it, even though it be admitted that it is neither invariably efficient nor necessarily permanent in its effects.

In the treatment of certain morbid conditions of the endometrium especially chronic endometritis, uterine catarrh, and membranous dysmenorrhœa, I have found the application of the negative current through the insulated intra-uterine sound produce far more uniformly good effects than any other form of intrauterine medication with which I am acquainted. I am quite satisfied that there is nothing to compare with this in these very troublesome cases, many of which had lasted for years, and resisted every kind of treatment previously used. I have now notes of several cases of membranous dysmenorrhœa either completely cured or very greatly benefited by four or five intrauterine applications of this kind, and quite a number of cases of obstinate chronic uterine catarrh of long standing, in which the same can be said. I do not think that I have ever made more than five or six applications. Now, I will confidently appeal to any gynæcologist of experience to state if he is cognizant of any method of dealing with such cases, the obstinacy of which is proverbial, in which similar results have followed so brief a treatment. For neatness, simplicity, and effect I believe it surpasses all other methods of dealing with these conditions of the endometrium, nor have I come across the slightest subsequent inconvenience.

I have little experience of the application of the negative current as a means of promoting the absorption of chronic inflammatory exudations in the pelvis, although it is very highly praised by Engelmann and others; I have used it in one or two cases without any very marked effects, and I was led to be sceptical of it having any influence. I have recently, however, had a remarkable case, in which a very considerable exudation, completely fixing the uterus, disappeared so rapidly under its use that I am convinced of its occasional marked influence in this way. This case is in many ways so curious that I am tempted to relate it. Lest I should be supposed to exaggerate the facts, I shall do so chiefly in the words of the lady's medical attendant:

"Last spring, March 25, 1888, was attacked with violent pain on the left side of the abdomen. Examination revealed a tender swelling over the sigmoid flexure, accompanied by a tendency to obstruction of the bowels, requiring breaking up of fecal masses. This went on for some weeks, during which the temperature was continuously febrile, and the patient sank into a condition of anorexia and extreme debility. She was seen by Dr. ——, who recognized with me the existence of pelvic peritonitis, but felt inclined to believe that there had been a partial intestinal obstruction, and even spoke of an exploratory operation. At the end of two months, the pain being less, the bowels a little more amenable, and the pyrexia gone, it was then ascertained that she had lost the use of her limbs, and was quite helpless."

After this, the patient came to the neighborhood of London, in a condition of total inability to stand or move, and was seen by various consultants. An eminent neurologist, amongst others, saw her and reported the absence of organic spinal disease, and obtained the opinion of an equally eminent surgeon, skilled in gynæcology, who proposed resection of the ovaries and their inflamed attachments. "Dr. —— believed that this would be reasonable, as removing a source of disturbance which was operating to the disadvantage of general remedial measures." A second opinion being desired, before the proposed operation was resolved upon, I was asked to see the patient. I found the uterus fixed in a mass of hard exudation, evidently the result of the antecedent acute disease, which had commenced six months before. The total loss of power, the emaciation, and anorexia, I concluded, were connected with extreme neurotic paresis. I felt it impossible to agree to the serious operation proposed, since the absorption of a deposit of so recent a date seemed to me not hopeless, and even if the operation was performed, it gave no guarantee of the cure of the general neurasthenia. The latter was of a type I was very familiar with, and which I felt hopeful of curing by a course of systematic treatment. I gave it, therefore, as my opinion that this should be tried in the first instance.

The friends, thinking, perhaps erroneously, that in the multitude of counsellors there is wisdom, now sought the advice of a well-known obstetrician. The result the husband reports as follows:

"On the occasion of my visit to you, in the course of conversation you spoke of Dr. —— in such terms that I decided at once on obtaining his advice. He confirmed your opinion that an operation was not admissible, and prescribed an absorbent (iodide of potassium) and a tonic (tinct. columbæ), which has since been followed regularly without benefit. He also advocated plenty of good and simple food. In this respect his advice has not been followed, as the patient cannot be induced to eat at all. His opinion is that the treatment you recommended by rest, massage, and feeding will do her harm."

Some weeks having been given to the attempt at following this advice, the patient ultimately came under my care. I need not report her steady improvement so far as her neurotic condition was concerned, except to say that the treatment certainly did not do harm, as in a month she could move freely, had gained over twenty pounds in weight, and was in perfect physical health. All this time no change had taken place in the pelvic exudation, which remained as dense as before, the uterus being immovably fixed. I now determined to try the negative electric current, and for this purpose introduced a vaginal ball electrode covered with cotton, and passed a current of 100 milliampéres every third day. The effects were instantaneous and most remarkable, the pelvic pains immediately lessened, and the deposit almost melted away. In three weeks there was nothing to be felt; the uterus was freely movable in every direction, and the examination showed a perfectly normal state of the pelvic organs. At the end of two months from coming under my care this lady was walking and driving about in perfect health, having gained thirty-two pounds in weight. Now about this case there can be doubt. Sufficient time had been given to see if improved general health would do anything towards bettering the local mischief, but no benefit followed; the instant the negative current was used an immediate cure was effected. That it was a *propter hoc*, and not merely a *post hoc*, is a conclusion no reasonable man can question. It is a fair argument, moreover, to point out that the use of electricity actually saved this lady from having her ovaries removed by an eminent surgeon who has publicly declared his disbelief in its efficacy. At the same time I cannot consider it an agent to be recklessly or generally used in inflammatory exudations. Unless they are of long standing and thoroughly chronic nothing is more likely than that it would light up the embers of the inflammation and lead to a relapse.

I have here said nothing as to the faradic current, the applications of which are much less important, and at the same time less open to controversy.

The conclusions, I think, may be fairly summed up as follows:

1. The continuous current is capable of effecting much good in certain selected cases, otherwise little amenable to treatment; and its introduction is, therefore, a distinct gain to gynæcology.

2. It is an agent of considerable power, and therefore, if rashly and injudiciously used, it is also capable of doing much harm.

3. It involves the use of a costly plant, and it is troublesome and tedious to work.

4. Since the proper selection of cases requires, moreover, much special knowledge and great care in the application of the remedy, it is never likely to come into very general use.

ON THE ELECTRICAL TREATMENT OF UTERINE FIBROMATA. By Dr. Georges Apostoli, of Paris.

The electrical treatment of uterine fibromata which I created in 1882, and which has received in all quarters almost unanimous approbation, has recently been discussed before the surgical society, where a method has arisen which claims to be the *best* of all, and which is reported as *new*, because it is founded on the employment of currents of *moderate intensity*, and on *extra-uterine action* and *reversals of the current.* In a paper read before the French Congress of Surgery in October, 1889, I have taken occasion to oppose both of these claims in an argument of which the following is a *résumé:*

1. The method proclaimed by Drs. L. Championniere and Danion *is not new*, and is nothing but an entire reproduction of old methods, which have been tried and partly abandoned.

(*a.*) Apostoli claims the priority and the authorship of every medical application of electricity of over fifty milliampères (see the theses of Carlet in July, 1884). During two years he exclusively employed intensities varying from forty to seventy milliampères; afterwards he judged it useful to increase them, not in an exclusive and blind manner, as it has been falsely said of him that he advises, but in a manner rational and progressive, according to the case.

The intensity should be moderate in the cases of intolerance from uterine or peri-uterine causes (affection of the appendages); the intensity should be high in all the serious forms, which are complicated with endometritis or hæmorrhage.

(*b.*) Aimé Martin, and Chéron, as early as 1879, were the first to extol the extra-uterine action of electricity, applied either upon the cervix or in the vagina, and they were the first to employ either reversals or interruptions of the galvanic current.

Moritz Benedickt, of Vienna, likewise employed reversals of the continuous current before Drs. L. Championniere and Danion.

2. The method proclaimed by the latter authors is inferior to the method now used by Dr. Apostoli,—

(*a.*) Because they do not *cease operating* as surgeons, and continue performing castrations and hysterectomies.

(*b.*) Because they *select their cases*, using electricity on the women who are advanced in years or not very ill, and operating on young women.

(*c.*) Because they have had *want of success* sufficient to justify their adoption of surgical measures.

(*d.*) Because their method remains vaginal and *extra-uterine*, and thereby is excluded by an arbitrary limitation from curing any concomitant endometritis.

(*e.*) Because with them *relapses* occur if they do not keep up the treatment.

(*f.*) Because they do not claim the *disappearance* of inflammatory peri-uterine exudates.

(*g.*) Because the addition to the treatment of the use of solution of chlorinated soda, as extolled by them, shows that that their method is *unreliable.*

(*h.*) Because they have not observed *manifest anatomical diminution of the fibroma.*

To the claims of Drs. L. Championniere and Danion, which are based on an experience of seven months, Apostoli opposes his method, which is seven years old, and which has received the good opinion of all those who have tried it, comprising altogether several thousands of observations, made in France and in other countries.

His method is innocuous, and can always be endured when applied in conformity with the rules which he has laid down for the technique (the very rare cases of death are due in great part to errors of diagnosis, —tumors of the appendages mistaken for fibromata, and treated by electricity).

His method is most efficacious,—

1. Because it claims to be sufficient by itself alone, and to supplant surgery in most cases in the treatment of fibromata.

2. Because it does not select its cases, and it ameliorates the condition of all the patients, young and old, although with variable results.

3. Because with this treatment, want of success is the exception in fibrous tumors which are simple and not fibrocystic, and which are not complicated with ascites, nor with peripheric lesions of the appendages.

4. Because it utilizes the action of vaginal galvano-punctures, either alone, or conjointly with the uterine action which is required by endometric lesions.

5. Because with this treatment relapse is the exception, and in most cases the results remain permanent after a treatment of sufficient duration.

6. Because it embraces in its sphere of action, under the various formulæ regarding intensity and localization, the treatment of fibroma, that of endometritis, and that of a great number of cases of ovaro-salpingitis.

7. Because it can dispense with the combination with any additional treatment, even with that of solutions of chlorinated soda.

8. Because with it there is observed an anatomical reduction of the fibroma, not entire, but partial.

ULCERS—A CLINICAL LECTURE. By Pinckney French. M.D., Adjunct Prof. of Principles and Practice of Surgery, St. Louis College of Physicians and Surgeons.

Gentlemen:—This woman, who is 56 years old and a resident of the city, invites our attention to a subject of interest to all practical surgeons, and especially to young men like yourselves who contemplate the making and extending of reputations by effecting speedy and permanent cures. The diagnosis in this case will not be difficult to those of the class who have spent the winter here, as such cases frequent our college dispensaries. We call your attention first to the varicose, or dilated state of the superficial veins of one of the lower extremities, due to a local retardation of the venous circulation at this point. This condition is common in pregnant females. Just below we find small livid tumors, without pulsation or thrill, which disappear upon pressure. These are dilated tortuous veins. The limb, you observe, is slightly œdematous, and just above the ankle we find three sores or ulcers. These present all the characteristics of a varicose ulcer—they are exceedingly indolent and callous. We define ulcer as a solution of continuity. An inflammatory process by which molecular death of the part involved takes place. It may occur upon any part of the body, externally and internally. The causes of ulcers are both local and constitutional. The most frequent local causes are, injury, violence and the application of heat and cold; by these means the vitality of a given portion of the soft structure is interfered with and ulceration takes place. Any local means which disturbs the circulation like garters and varicose veins, etc., will favor the development of an ulcer. There are three general or constitutional causes, all having reference to the blood of our patient. Either there is insufficient blood supply to the part affected, or if the quantity is normal the quality is poor and impoverished, or there is some obstruction or disturbance in the circulation of the blood in the part, due to some special constitutional condition. You notice that these ulcers are situated upon the front part of the leg. This is their common location. This portion of the limb is unusually exposed to injury among the laboring people, and this, with want of cleanliness, intemperate habits and insufficient food among people beyond middle life, makes the occurrence of ulcers in this region quite frequent. In this case, however, the ulcers are due to enlarged superficial veins by which a stasis of blood took place, followed by innutrition and death of the tissues, producing the deep excavated sores which you see. We want to remind you of the fact that every ulcer which occurs upon a varicose limb is not by any means a varicose ulcer. The blood often flows perfectly through vessels which are tortuous and much dilated. If, however, there appears œdema of the connective tissues and infiltration of exudation, you may attribute the ulcer to the varicose condition of veins; but in the absence of œdema and other evidences of retarded circulation, the occurrence of an ulcer upon a limb having varicose veins, is a mere coincidence. Occasionally a varicose vein ruptures and the opening thus made may become the seat of ulceration even without the œdema just mentioned, and this fact must be borne in mind when you consider the causes and pathology of ulcers. By close inspection and touch you will find the tissues immediately surrounding the ulcers in this case hardened and dense, or what is termed indurated, an evidence that the ulcer has existed for a long period of time. Such a disease readily yields to a proper course of treatment, but as a general thing these people, who belong to the laboring classes, will not follow the instructions of the surgeon, and the rest that is so essential to speedy cures, they are unable to obtain. In addition to this, they are neglectful about cleanliness and permit the secretions to accumulate upon the clothing to irritate the sore, and again it is injured afresh from time to time; and as the disease does not completely disable them, or interfere seriously with their occupations, this mode of attention, or rather want of attention, goes on from year to year. As treatment in this case we will instruct our patient to take all the rest consistent with her duties as a housekeeper, and to apply to the limb each evening for six or eight days, a thick flaxseed poultice sufficiently long to entirely encircle the limb. This will remove the induration and better prepare the parts for healthy granulation. The application of an elastic bandage or stocking so as to secure uniform support by pressure to the venous circulation will not only effect a speedy cure but is necessary to prevent a recurrence of the trouble. This is our chief reliance in varicose ulcer, but as the lady is not able to purchase either, what shall be done? Apply a roller flannel bandage, about two inches in width, and from fifteen to eighteen feet long—beginning over the metatarsal bones and going upward—being careful to make uniform pressure throughout. Over each ulcer, before bandaging, place a small piece of linen which has been well soaked in carbolized vaseline. The patient will be requested to remove this bandage on retiring at night and to replace it before rising the following morning. It is only necessary to apply the bandage so tight that it will retain its position on the limb after the patient rises, the increase in the size of the limb due to increased flow of blood will make the bandage tighter but not uncomfortable. It will rarely be necessary to resort to skin-grafting in these cases, and the practice of elevating the foot of the bed, to assist by gravitation the return of the venous blood, is more fanciful than advantageous. The general system may be improved by the judicious use of iron and strychnine, and a very good remedy in cases of this kind is tinct. digitalis, given in eight or ten drop doses three times daily. This will give tone to the heart, and will materially strengthen the general circulation. The wearing of an elastic stocking will prevent a recurrence of this disease, and in its absence it will be necessary to keep up the use of the flannel bandage for an indefinite period. We are disposed to devote the remainder of the hour to a discussion of the different varieties of ulcers. Of the specific ulcer, such as the syphilitic and others, we will not speak, neither will we consider those ulcers affecting the alimentary tract or air passages. Other instructors will describe these varieties, and hence we will now only consider the superficial—specific ulcers.

There are six or seven varieties of this form of ulcers, which simply indicate the stage of, or present condition of the ulcer.

For example, when death of the superficial tissues, including the skin, takes place as the result of an injury, the tissues involved are thrown off leaving a healthy granulating surface that is bathed with a healthy pus, which is of an oily feel and a cream color; and, all conditions being favorable for a rapid healing process, it is termed a simple or healthy ulcer. When from any cause an ulcer of this kind becomes inflamed during the progress of the healing, and the discharge is changed to a thin, bloody fluid, the parts becoming hot, swollen, and painful, it is termed an "inflamed ulcer," or what some authors are pleased to call a "phlegmonous ulcer." If our patient is weak and depleted in vitality, the hot and painful margins of the last-mentioned ulcer will most likely break down rapidly, and you will then have a "sloughing," or what is termed by some a "phagedenic ulcer." After the destructive process of ulceration has ceased, and granulations appear which are unhealthy, flabby, devoid of sensibility, and very weak, and rather abundant, it receives the name of "weak or œdematous ulcer." When a simple ulcer occurs in a very nervous subject, or when the destructive process has destroyed a nerve sheath, thereby exposing the peripheral fibre of the nerve itself, the ulcer sometimes becomes very sensitive and painful, and hence is called a "neuralgic, painful, or irritable ulcer." A simple ulcer, by want of cleanliness—neglect about accumulated secretions—irritation from clothing—repeated injuries and by existing from year to year, becomes dusky in color, of feeble circulation œdematous and chronically infiltrated is then termed an "indolent or callous" ulcer. An ulcer occurring in a patient who is of a scorbutic or hæmorrhagic diathesis, or when the blood supply is so abundant as to produce excessive action as shown in forming granulations too rapidly, we have a hæmorrhagic tendency and the sore is, therefore termed a "hæmorrhagic ulcer." So, gentlemen, you see by what we have already said, that the name which is applied to an ulcer has reference more particularly to its condition than to its cause or pathology. From a clinical standpoint, we have only two classes of ulcers—the acute and chronic ; and, of the latter class, the weak or œdematous ulcer must not be confounded with some of the forms of cancerous disease. The fungous mass of granulating tissue which sometimes appears in these cases may create a suspicion in your minds as to its malignancy. You will have little difficulty in coming to a correct conclusion if you will only remember the practical points that we will mention. First, fungous granulations nearly always spring from ulcers which are situated upon joints or tendons. Second, to the touch they are soft and velvety ; on the other hand, malignant growths usually occupy other situations, and the mass resembling granulation tissue is of a firm, dense feel, and is not affected by constant pressure as is the case with the fungous mass of the ulcers. With this exception, the exercise of ordinary care will enable you to correctly diagnose these diseases.

With respect to the treatment of ulcers, we invite your attention to a fact that is of practical value in estimating the length of time required to effect a cure and the amount of disfigurement that will result. If the ulcer is situated upon loose connective tissue, as in the neck or other portions of the body where the blood supply is abundant, the healing process will be rapid and the scar left will be quite small. If, on the contrary, the ulcer be situated upon the shin bone, where the structures beneath are solid and unyielding, and where the blood supply is limited, the process of cicatrization will be tardy, and the scar left large and unsightly. In the first case, the loose tissue permits the borrowing of the skin necessary for rapid healing from the surrounding parts; while, in the latter, the healing depends wholly upon new material formed by granulation to fill up the gap. In the case of a healthy ulcer, nothing more is required than cleanliness and protection to effect a speedy cure. This is accomplished by the prudent use of antiseptics and proper dressings. When, however, we speak of the chronic variety, in the various conditions of which we have spoken, a different course is requisite to effect permanent relief, and one of four means or methods is generally adopted for bringing about a condition of the ulcer that is favorable for a healing process, and one that facilitates the process of cicatrization after healthy granulations have been established. The first means are blisters, elastic bandages, incisions, and strapping. The last is skin grafting. The application of a blister to an ulcer is based upon Indian philosophy, that the sore would not heal but the burn or blister would. The blister excites inflammation of a more active character, and thus favors repair. The infiltration of serum has caused the callous and indurated condition about the ulcer, and the blister furnishes an outlet through the skin by which the serum is drained off and the induration lessened. The benefit you may expect is a more healthy reparative process and more speedy union. When other measures fail, you apply the blister. Make it large enough to cover the ulcer and all surrounding tissues which are indurated or hardened, and allow it to remain on the limb from six to eight hours. After its removal, dress antiseptically with carbolized cosmoline and borated cotton, and bathe the wound daily with a solution of boracic acid, ten grains to the ounce of water. This kind of treatment is especially adapted to an old and inveterate sore, and the preparatory treatment of a hot bath or flax-seed poultice is not required. A very successful and easy way to encourage the growth of granulations in indolent ulcers is the application of adhesive plaster cut into strips about an inch wide and fifteen inches long, and passed around the limb from behind having the ends to cross each other obliquely upon the surface of the ulcer, and in opposite directions. Commence an inch or two below the lower margin of the ulcer, lapping each strip about one-third of its width, and go upward until the sore is completely covered. Over this place a piece of borated cotton and a roller bandage. The last should be replaced every day, but the adhesive strips need not be disturbed until they become more or less soaked with the secretions and thereby loosened, when they should be removed and fresh ones applied. Two practical points to observe in this plan of treatment to ensure success—one is the provision for drainage made by cutting holes at the lower margin of each strip, and the other the moistening of the strips with spirits of turpentine to make them perfectly and quickly adhesive, It is always better to preface this treatment with the warm water bath or poulticing referred to a few moments ago. When the surrounding tissues of an ulcer of long standing become very hard and unyielding, you may make several incisions parallel to the margins of the ulcer and about three-fourths of an inch therefrom, so that the vessels that leap directly to the ulcer will not be severed, and sufficiently deep to penetrate the connective tissue beneath the skin. This plan permits the discharge of the infiltrated serum and the sliding of the skin towards the ulcer, both of which are favorable to a healing process. I will show you upon the blackboard the manner of these incisions. The opening made by the incisions are kept well filled with borated cotton in order to make them repair by granulation. This treatment is followed by the dressing and antiseptics mentioned in connection with the blisters. The fourth and last means that I will mention for the successful treatment of indolent or chronic ulcers, is the application of the rubber bandage. It is unually made of pure rubber, about three inches wide and ten feet long, for a very large person the length may be increased to fifteen feet. It is applied by beginning over the instep and sole of the foot and then up the leg in a spiral way as high as is desirable. Your patients are instructed to apply the bandage to the limb while in bed, and just tight enough to retain its position on the limb. Direct them to remove the bandage at bed-time, wipe it and the limb dry. Place over the ulcers, a small piece of old cotton muslin smeared with vaseline, and cover with a loosely applied roller bandage. No bathing or poulticing need precede this form of treatment. Its *modus operandi* is that it supports the distended and weak blood vesels by gentle and even pressure, and hence the form of ulcer which yields readily and promptly to this treatment is what has been described to you as a varicose ulcer, although you will find it a most excellent remedy in all forms of indolent and callous ulcers. We are indebted to Dr. H. A. Martin of Mass., for an accurate account of the value and use of the rubber bandage in the treatment of ulcers, given ten years ago. The elastic stocking, now much used, acts in the same manner as the bandage. It is made either of cotton elastic or silk elastic, and when made from accurate measurements is an excellent and neat way of securing the necessary support and pressure to blood-vessels. After using the means suggested till the surface of the ulcer has been placed in a proper granulating condition, you may adopt the method of skin-grafting, and thereby hasten the healing process. The important fact that a small piece of skin could be placed upon a granulating surface, and that it may become the centre of a new skin growth was first announced by Professor Hamilton in 1854. The method had succeeded in a case under his care. Some fifteen years later, physicians in Europe published successful cases; and, a year or so later, the late Dr. Hodgen of this city conducted some experiments which yielded excellent results. Subsequent to this, Drs. Bribach and Studer, who were connected with our City Hospital, tested the accuracy of this method, and, be it said to the credit of the profession of our city, did much to enlarge and disseminate a correct understanding of the treatment. In order to be successful in skin-grafting, you must first place the granulating surface in a proper condition, and I mean by this a surface free from dead tissue, and with a scanty discharge and small regular granulations. If the ulcer surface is covered by large granulations which bleed upon the merest touch, and from which there is a copious flow, you may not expect success to follow your efforts at skin-grafting. In other words, you must make the granulating surface healthy and favorable to healing before you apply grafts. As grafts, you may use small bits of cuticle (taken from any part of the body, free from a heavy growth of hair), arranged in rows or at regular intervals across the surface of the ulcer, or dry epidermic scales, scraped from the sole of the foot and sprinkled over the surface of the ulcer. More recently, some of our German friends are using strips of very narrow skin, say a line or two in width, and ranging them in rows across the ulcer's surface. The dressing and after management will have a great deal to do with the success of your operations. If bits or strips of skin are used, cover them with small strips of sheet gutta-percha, cut just wide enough to completely cover the grafts. and made long enough to lap an inch beyond each margin of the ulcer. Moisten the extra inch at each end with sulphuric ether, to cause it to adhere to the sound skin, over this place a layer of borated cotton covered by a loosely applied roller bandage. Renew the cotton every day, but do not disturb the strips for about a week, at which time the grafts should be firmly adhered. If the dry scales are used, you must use a sheet of gutta-percha to cover them—have it sufficiently large to overlap the ulcer's margins, and thereby made secure, and have cut into it many small openings to permit the escape of the discharge, or your operation will fail. If the surface of the ulcer is put into a proper condition, and care is taken with the dressing and after-management of the case, the method rarely fails, and you will note with pleasure the healing of a large ulcer in from ten to fifteen days.

HEALING OF WOUNDS WITHOUT DRAINAGE.—By Dr. Ludvig Hektoen Pathologist to Cook County Hospital, Chicago.

In the following cases observed in the services of Cook County Hospital, during the last few months, no drainage was used. These cases are not all in which this innovation has been practiced, but simply illustrations of cases in which its utility has been clearly and successfully demonstrated. As far as the records of the hospital during the past year go, primary union without any untoward results has been observed just as frequently, if not more so, in cases where drainage was suppressed as in presumably aseptic cases where it was established.

Case I.—Anchylosis of right knee at right angle; excision of wedge-shaped piece; no drainage; primary union.

Woman, æt. 25 years, fell when nine years old on her right knee, which at once became painful and swollen. Two years later she fractured her right femur just above the knee, and during the next two years the limb became fixed in its present position, that is, flexion to almost a right angle at the knee, in which there is no mobility whatever, with outward rotation of the leg and subluxation of the tibia, so that without crutches it is difficult for her to walk. Examination of the heart and lungs was negative; the cervical glands were all much enlarged.

November 2d, 1888, Dr. Fenger removed the patella and a wedge-shaped piece from the tibia and femur, including the anchylosed joint, bringing the limb into a straight position with as good co-aptation of the bone ends as possible. The curved incision in the skin was united with silk, and a plaster cast enclosing the entire extremity and the body, applied over the dressing. No large vessels were cut during the operation and no ligatures were used. There was no fever or pain during the following month, at the end of which the cast was cut so as to expose the knee; the dressings were perfectly dry and the wound was firmly united; the sutures were removed. A week later a small cast was applied to the knee, after the large one had been removed. There was firm, bony union and the limb was in the position in which it was placed at the time of operation, a slight flexion at knee with toes pointing away from median line.

Case II.—Gangrene of toes and heel; Amputation through middle of leg; no drainage; primary union.

Man, æt. 58 years, gardener, awoke one morning, two weeks prior to admission into the hospital, and found both his feet swollen up to his knee. The swelling subsided after a few days, but the toes on both feet and the heel became black. Examination of the heart and lungs was negative; there was no history of polyuria, and the urine was normal. The left knee and all the toes on the left foot were gangrenous; the foot was œdematous and emitted a cadaveric odor. The balls of the toes on the right foot showed gangrenous patches. A week later, under wet dressings, a line of demarcation formed between the toes and the sound tissue of the left foot; there was a circumscribed area about one and a half inches in diameter on point of left heel where necrosis extended deeply into the tissues.

Circular amputation of the left leg, at its middle, was now made by Dr. Fenger; hæmorrhage was controlled by digital pressure over the femoral artery. The wound was carefully and accurately closed with periosteal, muscle and skin sutures of silk; no drainage.

Examination of the foot showed the arteries to be the seat of an endarteritis deformans. The intima was rough and strewn with calcareous plates, the lumen of the vessels remaining patent from the rigidity of the walls. At the point of bifurcation of the posterior tibial into the external and internal plantar arteries, was a dark colored, quite firm thrombus.

The healing was uneventful; ten days after the amputation the first dressing was removed and the wound found united by primary union.

Case III.—Tuberculosis of knee joint; typical resection; no drainage; primary union.

Woman, æt. 45 years, has suffered with pain and swelling of the left knee for several weeks. Examination showed some subluxation of tibia and exaggerated lateral mobility.

December 31, 1888, the writer, under Dr. Baxter's direction, made a typical resection of the left knee joint which was found to be the seat of a synovial tuberculosis with some destruction of the ligaments and erosion of the cartilages. The bone ends were fixed in apposition by three steel nails and the semilunar incision closed with silk sutures, after careful hæmostasis; no drainage.

Six weeks subsequently, during which she had no fever or pain, the cast and dressing was removed and primary union of the soft parts found. Three weeks later the nails were removed and firm bony union had taken place. In July, 1889, patient walked into the hospital without crutches and the limb was found to be in almost as perfect a state as could be expected.

Case IV.—Crushing injury of foot; Pirogoff's amputation; no drainage; primary union.

Boy, æt. 10 years, had his foot crushed under a railroad car. After a fruitless attempt to save the major portion of the foot, Dr. Fenger made Pirogoff's osteo-plastic amputation at the ankle, suturing the wound firmly together without any drainage. Ten days after the operation the wound had healed by primary union.

Case V.—Synovial tuberculosis of sacro-iliac joint; extra pelvic abscess; operation; no drainage; primary union.

Women, æt. 25 years, began to suffer in December, 1888, with increasing lameness and pain in region of left hip. In April, 1889, swelling appeared over left buttock, which "broke" in a few days and has since discharged a small amount of "matter" daily. Examination shows a sinus commencing one inch above and three inches posterior to trochanter major and passing upward and inward.

May 17, 1889, Dr. Herrick opened the sinus which was lined with pale, grayish, flabby granulations, and found it to pass into left sacroiliac joint through small opening in the upper third of the articulation. This opening was enlarged with chisel sufficiently to admit a sharp spoon with which the joint was thoroughly scraped, and then it was cauterized with Paquelin's cautery. The incision was closed without drainage. Primary union, without fever or pain, obtained in nine days, and on the 25th of June it was noted on her history that she had been walking, without pain, for two weeks.

Case VI.—Tuberculosis of knee joint; arthrectomy; no drainage; primary union.

Woman, æt. 22 years, had pain and swelling in left knee for five months. Examination showed enlargement, tenderness, moderate amount of backward subluxation of tibia and preternatural mobility.

June 10, 1889, Dr Wittwer made an arthrectomy, laying the joint open by a semilunar incision upon the patella. The synovial membrane was lined with gelatinous granulations and there was some destruction of the joint cartilages. Suture without drainage. July 20th the knee was dressed for first time. The incision was healed by primary union and there was no pain or tenderness about the joint whatever.

Case VII.—Tuberculosis of knee joint; atypical resection; no drainage; primary union.

Woman, æt. 19 years, was kicked nine years ago on inner side of left knee which has since been painful and swollen over inner tuberosity. Examination shows enlargement, tenderness, grating in joint on movement, and increased lateral mobility.

June 18, 1889, Dr. Murphy opened the joint with a horse shoe shaped incision below the patella. The articular cartilages were destroyed, there was a small caseous focus in each tibial tuberosity and in the patella, all communicating with the joint. All the diseased tissue was removed and the entire surface cauterized and then the incision was sutured without drainage. July 20th the wound was dressed and primary union was found to have taken place.

Case VIII.—Crushing injury of leg; thigh amputation; no drainage; primary union.

Man, æt. 30 years, received a crushing injury of leg and knee necessitating amputation of thigh at junction of middle with upper third, which Dr. Morass performed by the circular method. The wound was united with periosteal, muscle, and skin sutures, without any drainage. During the following two weeks patient had no pain or fever; at the end of this time he was dressed and there was primary union throughout.

Case IX.—Crushing injury of leg; amputation; no drainage; primary union.

Man, æt. 30 years, received a crushing injury of left leg in railroad accident. Dr. Hart made a circular amputation just below the knee and united the wound without any drainage. There was primary union in ten days under one dressing.

Case X.—Compound comminuted fracture of both bones of the leg; Wiring; no drainage; primary union.

Man, æt. 35 years, jumped from the floor of a freight car to the ground and fractured his leg. Examination, upon admission to the hospital an hour later, showed a fracture of both bones of the left leg at the juncture of the lower with the middle third; between the ends of the fractured tibia could be felt a loose wedge-shaped fragment; on the inner surface of the leg at the site of the fracture was a punctured wound admitting tip of index finger. Under careful antisepsis Dr. Herrick made an incision over the site of the fracture in the tibia, removed the loose wedge-shaped fragment 1x1½ inches in size, wired the ends of the tibia with one silver wire, sutured the wound without drainage and applied a cast over the dressing. At the end of one week there was a slight rise of temperature and the dressings were taken off, but as the wound was in a very satisfactory condition it was not disturbed until a month later when the sutures were removed. Primary union of the soft parts was then found, but only slight bony union. The bones finally united after the application of several casts and the removal of the wire, and the patient went home with an almost perfect leg, after staying in the hospital for three months.

Case XI.—Tuberculosis of knee joint; arthrectomy; no drainage; accumulation of fluid, fever; drainage; primary union.

Boy, æt. 8 years, was admitted with enlargement of the left knee, which was painful; there was increased lateral mobility and backward subluxation of tibia. He had some fever. April 7, 1889, Dr.

Murphy made an arthrectomy for a synovial tuberculosis and closed the incision without any drainage. The temperature, which before the operation had been 100 to 102°, continued unchanged, and two days subsequently the dressings were removed. The incision appeared satisfactory but fluctuation was obtained on each side of the extensor tendon, and on making a small incision, about three ounces of clear serous-looking fluid escaped. A drainage tube was placed in the incision and the dressing reapplied. The temperature fell to normal in one day and primary union took place in four weeks without any further interruption than to remove the drainage tube at the end of a week after its insertion.

In all these cases the field of the operation was rendered thoroughly aseptic by scrubbing with soap and water, shaving, washing with ether or alcohol and then with sublimate solution. Whenever possible this would be done a day or two beforehand and a wet dressing applied to be removed immediately before commencing to operate. During the course of the operation rigorous antisepsis was always observed ; pieces of bichloride gauze were used for sponging and bichloride solution for irrigating ; careful hæmostasis would be made before closing the wound, which was done as accurately and tightly as possible without strangulation, so as to avoid the formation of any dead spaces. Silk rendered asceptic by boiling in water and preserved in alcohol was used for ligatures and sutures. Finally a copious antiseptic dressing would be applied exerting quite firm and uniform pressure. Up to the present time but very few surgeons have had the courage to so implicitly trust in their control of the technique of ascepticism as to forego drainage in wounds in operations of any mag-nitude.

Jules Boeckel (*American Journal of Medical Sciences*, July, 1889), in a recent communication to the Societé de Chirurgie stated that he employed no drainage whatever, and gave the results obtained in thirty-three major operations among which were extirpation of the breast, resection of the knee, amputation of the thigh, excision of cervical and inguinal glands, etc. He had no deaths attributable to the suppression of drainage. In the discussion that ensued Ollier stated that he had not yet dared to omit drainage in resections of the knee ; in his opinion it would certainly be unsafe to dispense with it in cases where there were extra-articular purulent foci.

The results in the cases reported here and elsewhere demonstrate that an aseptic wound needs no drainage. In the absence of any bacteriological examination of the fluid in Case XI, this case must be thrown out of consideration, because if the fluid were and had remained aseptic there is no apparent reason why it might not have been absorbed in a short time. It is well known that the large effusion around a fracture disappears without any symptoms, and in the successful healing of wounds according to Schede's method granulations rapidly replace the aseptic blood clot. If the fluids exuded after an operation or an injury remain free from infection they will be absorbed into the system without any disturbance in the wound itself or of the general health. Drainage then, is not really indicated in aseptic wounds and a wound, aseptic at the end of an operation, certainly runs a much smaller chance of infection subsequently when drainage is suppressed than when it is used. M. Chenieux, in an article in *Revue de Chirurgie*, for November, 1886, states that drainage is an enemy to primary union because the drain, no matter of what nature, occupies a certain amount of space where the margin of the wound cannot be brought together, and because the innocuous, aseptic exudations, capable of reabsorption but lost in case of drainage, may become the vehicle for microbes if thorough antisepsis should not be secured during the dressings. It is only in infected wounds or in wounds where the possibility of infection may be strong, that drainage is clearly indicated. It has long been customary to close smaller wounds without drainage; if accurate coaptation and asepsis can be secured in extensive wounds, and they can in most cases, the conditions for primary union are just as favorable in large as in small wounds.

In order to secure primary union without drainage, the ideal result, the following conditions may be considered essential: The wound must be left aseptic at the end of the operation by vigorous anti or asepsis during the course. All the minute details of antisepsis and asepsis must be fully mastered. Solutions of carbolic acid should not be used for irrigating as it corrodes the tissue, dissolves the occluding thrombi, and increases exudation. Perfect hæmostasis must be secured before the closure of the wound so as to reduce the pressure within the wound to a minimum. The wound must be accurately and firmly coapted and closed with tension, approximation and buried aseptic sutures, if necessary, in order to prevent the formation of any dead spaces in which fluids might accumulate. Finally, a suitable antiseptic dressing should be applied so as to exert equable pressure, and permitted to remain if no positive indication for its removal arises, until primary union has been secured.

Perhaps the dry operation of Landerer may be found especially suitable in cases where primary union without drainage is desired. (Arch. f. Klin. Chir. XXXIX-1. p. 216, 1889).

Landerer avoided bringing any aseptic solutions in contact with the wound, which is dried with pieces of bichloride gauze and packed at once in those parts where the knife is not at work. Among many other advantages for this dry method of operating he claims rapid and certain healing, as the absolutely dry wound surfaces are peculiarly well suited for primary union.

Conclusions:

1 Primary union throughout the entire extent of the wound is one of the principle objects of antiseptic and aseptic surgery.

2. An aseptic wound needs no drainage.

3. The suppression of drainage simplifies wound treatment, reduces the chances of infection, and makes primary union of the whole wound possible if it be aseptic and correctly closed.

ORIGINAL ABSTRACTS.

By DR. KIRKLAND RUFFIN, Norfolk, Va.

THE DIAGNOSIS AND TREATMENT OF ANEURISM OF THE AORTA. Discussion in the Medical Society of London, on December 9 and 16, 1889.

Dr. R. Douglas Powell opened the discussion. Although the anatomical description of aneurism still included the fusiform and sacculated forms, yet, clinically, all the features of aneurism belong to the sacculated form, while the fusiform variety in regard to clinical signs and treatment merged into form of heart disease with which it is associated. In the fusiform variety the signs usually are manifested about the commencement of the vessel, no pressure signs are present, and death occurs from heart failure, angina, or syncope, and not from rupture or compression of vital parts. The essential phenomena of sacculated aneurism are: first, those of pressure tumor signs; secondly, those indicative that the tumor is a vessel-tumor, a disarticulum from the vessel. If we attach primary importance to the signs of arterial disease without sufficient inquiry into those of the tumor, we invite error in diagnosis.

The pulsations and murmurs resembling aneurism may be present in vaso-motor paresis of the uncovered aorta from retractive fibroid lung, and still more commonly in the abdominal aorta; but in all these cases, though the signs of vessel disease are abundant, still those of a tumor causing localized pressure are absent. Sometimes it is necessary to use chloroform in order to explore the aorta with sufficient completeness. A systolic murmur heard over a localized area remote from the heart is of value in diagnosis; but there is no murmur in about half the cases of aneurism, A diastolic murmur is of great value in diagnosis, and if associated with the pressure symptoms of tumor, the aneurismal nature of the tumor is almost demonstrated. Thrill is a rare sign in true aneurism, but common in simple dilatation of the vessel and in spurious aneurism. Pressure symptoms of aneurism are similar to those of other tumors, except there may be more inconstancy. The history of the patient and superadded symptoms of vessel disease, complete the diagnosis. As specially important signs, he mentioned a systolic jog and, of greater importance, a diastolic shock sound; both of which could be better heard with a rigid stethoscope. The second shock sound depends of the following conditions: First, the aneurism must be situated about the arch of the aorta; second, it must be sacculated; and thirdly, there must be no serious aortic incompetence. This sound is sometimes present when all others are absent; but if it is distinct, it is absolutely diagnostic of aneurism. The laryngoscope also aids in the diagnosis, but the sphygmograph is of little use.

Tufrell's method of treatment is more valuable when it can be carried out, especially in cases of abdominal aneurism and of sacs deeply pressing on vital parts. This treatment (1) diminishes the cardiac beats, and therefore the aneurismal distensions by many thousands daily; (2), it reduces blood volume, and is said to inspissate or render more fibrinous the blood; (3), it reduces blood pressure, slows the current through the aneurism, and so favors conditions for clotting from the periphery. He believed the clotting to be more than a mere mechanical process, for he thought that in the stagnating current the white corpuscles made for the periphery, and perhaps carried with them the coagulating principle, lecithin.

Dr. Powell condemned the wire and galvano-puncture because they cause the wrong kind of clot and in the wrong place, but he had seen in certain cases severe symptoms relieved by them.

Dr. Broadbent agreed with the author that the pressure signs were more important for diagnosis than the disturbance in circulation with the qualification, that the pressure signs depended very much on the situation of the aneurism. Aneurism of the ascending aorta may become very large without any pressure symptoms, owing to its natural mobility. So much is this the case that he often speaks of this form as the aneurism of physical signs, while aneurism of the arch proper or of the ascending part, is rather an aneurism of symptoms. A murmur is rather the exception than the rule. A more valuable sign, independently of this, is the diastolic shock. He agreed that fusiform aneurism is not amenable to treatment, the only thing is to lower the general arterial pressure and enjoin rest. He had nothing to add with respect to the Tufrell treatment, but had found that iodide of potassium greatly promoted consolidation within the sac. He had several times met with cases when rest and careful dieting did no good, but were much improved by giving iodide of potassium. Only small doses of iodide could be taken if the patient be on the Tufrell treatment. He thought the iodide did more good when the mouth of the aneurism was small. He agreed with Dr. Powell as to the use of the iron wire, but he had seen good results follow the galvano-puncture. He only resorted to bleeding when there was pain, but then the relief was marked. He thought the treatment with ergot reduced the size of the tumor.

Dr. Ord said that in some cases of thoracic aneurism the first indications were from the circulation. He insisted on the diagnostic value of local signs, and said he looked to pressure symptoms to complete the diagnosis. He pointed out the liability to error when the lung was withdrawn from the front of the vessels, giving rise to pulsation and thrill; or when a tumor lay between the aorta and chest wall. He agreed with Dr. Powell as to the murmur, the relative bearings of sacculated and fusiform aneurism, and also as to the diagnostic value of diastolic shock. He agreed that the diagnosis of abdominal aneurism was often difficult, but said it could generally be settled by careful palpation. He had found Tufrell's method of treatment very valuable, but he generally also used iodide of potassium. He confirmed Dr. Broadbent's remarks as to the value of ergot, and called attention to its value in relieving pressure symptoms. The dose given by Dr. Dibson was twenty minims of the liquid extract with twenty drops of chloroform to cover its nauseating tendency, His experience was that galvano-puncture did not necessarily give rise to consolidation *en masse*.

Dr. Bristowe thought that drugs merely afforded a passing relief. He thought the Tufrell treatment the most promising. He had no faith in galvano-puncture nor in iodide of potassium. He had seen a case in which they thought consolidation had taken place, but the *post-mortem* showed there was no clot. Patients with aneurism are benefitted by rest, diet, and such measures as reduce the intra-arterial blood pressure. But he thought it preferable to allow such patients to continue their usual avocations, for by treatment we could only hope for a doubtful prolongation of life for a few weeks or months. Many people went on with their work and kept their health fairly well in spite of the presence of aneurism. He observed that, while in sacculated aneurism one object is to get a firm clot in the sac, in fusiform aneurism a clot is distinctly unfavorable to the patient's prospects.

The President, Dr. Williams, congratulated Dr. Powell on the practical character of his propositions, and specially on his attaching more importance to the pressure symptoms than to the cardio-vascular signs in the diagnosis of aneurism. He called attention to the fact that saccular and fusiform aneurism sometimes co-existed in the same patient. Murmurs were as often absent as present, and he had never heard the diastolic shock sound except in cases of aortic aneurism, and it was not always present in these. The relative importance of the different symptoms depended on the situation of the aneurism. In aneurism of the first portion of the aortic arch, there was usually pulsation, dullness, shock, or murmur; and it was usually with these cases that aortic regurgitant disease with retracted lung was confused; the position of the heart, the presence or absence of cardiac hypertrophy, and the results of measurement of the two sides of the chest should be distinguishing features. Pressure symptoms, and their variation due to changes in the size of the tumor, were specially important in aneurism of the transverse and descending portions of the arch. He had seen other tumors—a lympho-sarcoma and two cases of syphilitic glands—produce all the pressure symptoms of aneurism. He thought stridor a symptom of great diagnostic value, and he gave the history of a case in which it had been the only symptom. Marked tubular breathing over one or both scapulæ was sometimes a valuable sign in obscure cases; but we should rely on no one sign, but on the combination of the various phenomena. He has had difficulty in getting patients to follow out Tufrell's treatment; but has had good results by giving iodide of potassium, and lessening fluids and exercise. Sometimes consolidation took place under exactly opposite conditions, and he gave the history of a shoemaker who improved, though he continued at heavy work. He thought vaso-motor paresis of the abdominal aorta was frequently mistaken for aneurism.

Dr. Quain spoke of the case of the eminent surgeon, Liston, the diagnosis of whose affection had baffled the most eminent authorities of his time, though at the *post-mortem* he was found to have a large aneurism pressing on the trachea. He did not think a similar failure in diagnosis probable at the present time. He remembered many cases in which iodide of potassium had saved life, or had at least rendered it tolerable. He thought it very important to pay attention to very slight symptoms, and mentioned a case in which very slight stridor had been the only symptom, though the patient died shortly afterwards from rupture of an aortic aneurism.

Dr. Felix Semon said that on laryngoscopic examination we often found paralysis of an abductor, though there were no audible laryngeal symptoms, and therefore he urged the importance of always exaxamining the larynx.

Dr. F. de Havilland Hall mentioned cases showing the difficulty of diagnosticating between aneurism and pulsating empyema, and also two cases in which he had refused to advise tracheotomy for urgent dyspnœa due to direct pressure on the trachea, and in which there had been bilateral paralysis of the posterior crico-arytenoid muscles. In giving iodide of potassium he thought the limit had been reached when there was acceleration of the pulse-rate. In one case he has had great benefit from the local application of ice over the tumor. He preferred aconite to digitalis when a cardiac depressent was indicated.

Dr. Mitchell Bruce urged a thorough and systematic examination, whenever aneurism was suspected. Especially did he advise the simpler methods of examination.

Dr. Kingston Fowler thought we should attach more importance to pain as a symptom. He thought the prognosis as to duration of life, not so bad as it was usually thought to be, and he mentioned cases of five and eight years' duration. In Tufrell's treatment, he thought there were two chief parts, rest and diet. Aortic regurgitation was a contraindication of the Tufrell treatment.

Dr. Seymour Taylor pointed out, that rupture was the cause of death in small aneurisms, and pressure in large ones. He thought the *rôle* of syphilis in causing aneurism vastly exaggerated.

Dr. Douglass Powell, in reply, said that he agreed with Dr. Hale, that stridor was generally caused by pressure on the trachea, or bronchus, and that tracheotomy would rarely relieve the dyspnœa. He thought the cases for the Tufrell treatment, should be carefully selected. He said that he was sceptical as to the value of ergot in aneurism.

Accidents, Complications and Results following Internal Urethrotomy in One Hundred and Twenty Cases of Stricture. A Discussion before the New York Academy of Medicine, December 9th, 1889.

Dr. George E. Brewer read a paper with this title: He stated that the cases reported included all those of which he had any record. In all the 120 cases there was a distinct history of gonorrhœa, except in three, and in these no adequate cause could be ascertained. In but three cases had the normal calibre of the urethra been below thirty mm. in circumference. In 21 the normal calibre was 30 F.; in 44, 32 F.; in 29, 34 F.; in 2, 35 F.; in 17, 36 F.; in 1, 38 F.; in 3, 40 F.—the average being about 33 F. The number of strictures in each case had been from one to seven; and their location, with one exception, had been anterior to the bulb. In all cases where the stricture had been less than three-quarters of an inch from the meatus, the operation had consisted of an incision on the floor of the canal with a straight, blunt-pointed bistoury. If deeper than three-quarters of an inch, dilating urethrotomy with Otis' urethrotome had been practiced, the cut being made on the roof of the urethra. In one case he had departed from this rule and made his incision on the floor; it was followed by alarming hæmorrhage, urinary infiltration, chills, and fever. For anæsthesia, cocaine had been used in all but four cases. For the after-treatment, he had found the daily passage of a full-sized sound to the bulbo-membranous function, during the first four or five days, to be the best treatment, as the pain and hæmorrhage were more severe if it was passed after the cut surface had been glued together for two or three days. If recontraction took place, a tendency to contract would be detected within fourteen days. If after three weeks the urethra was healed, the use of sounds was abandoned and he considered entirely unnecessary to continue their use for a longer period.

The symptoms complained of by the patients and supposed to be due to the stricture were as follows: In 92 cases, gleet; in 11, frequency of micturition; in 13, some disturbance of the sexual function, 11 of these complaining of diminished sexual power; in six, chronic prostatitis; and in 4, hemalgia. The unfavorable complications were as follows: In 6, hæmorrhage (in 3 primary hæmorrhage, and in 3 secondary); in 3, chills and fever, and in every case they followed the passage of the sound through the deep urethra; in 2, epididymitis; in 1 (where the cut was made on the floor of the urethra), infiltration of urine; in 10, acute urethritis; in 4, a slight ecchymosis in the spine in the vicinity of the cut which caused a more or less lasting curvature of the penis on erection.

The results were considered under two heads—clinical and anatomical. Of the 92 cases of gleet, 53 were relieved, 11 not relieved, and 28 unknown. Of the 11 having frequent micturition, 9 were relieved, 1 not relieved, and 1 unknown. Those complaining of loss of sexual power were relieved. Of the 120 cases, 30 had been examined after a period varying from two months to three years. In nearly every case where the meatus had been divided it had slightly contracted. Of the 30 cases, 21 were found to have the normal calibre, and 9 had recontracted.

The chairman, Dr. Abbe, spoke of the comparative infrequency of external urethrotomy at the present time for stricture of the deep urethra. He had seen neuralgia resulting from stricture in four cases, and these had been relieved by division. The neuralgic pains had been referred to the thigh and lower extremities.

Dr. F. N. Otis thought that as operators gained experience, they would be led to do more in the matter of incisions. The localized bands of adventitious tissue constituting the stricture, should always be completely divided; it should be divided up to the full capacity of the urethra. The size of the urethra, for all practical purposes, bears a constant relation to the size of the penis. For a penis measuring 3¼ inches in circumference, the normal urethra measures 32 mm. in circumference, and for every quarter of an inch added to the circumference of the penis, the circumference of the urethra measures 2 mm. He did not think curvature of the penis after operations due to deep division, but he thought it due to a gluing together of the fascia of the corpus spongiosum or to some infarction within the mucous membrane of the urethra. These curvatures rarely lasted more than two or three weeks, and were then treated by massage with a sound in the urethra. If the curvature be due to deep adhesions, he would put the penis upon the stretch which was sometimes followed by an audible snap from the giving away of the adhesions. He thought the statistics of the paper distinctly in favor of internal urethrotomy, and he was not aware of a single authoritative case of cure by dilatation. It is very desirable to cure these cases as quickly as possible.

Dr. Sturgis thought internal urethotomy a dangerous operation. There was great danger of cutting too deeply. The upward incision was the only one which should be used. He agreed with Dr. Otis, that curvature did not depend on the incisions, but thought it due to inflammation and invasion of lymph into the spaces. There was danger of hæmorrhage, which was sometimes hard to control. He agreed with Dr. Brewer, that the operation should never be done until inflammatory symptoms had entirely subsided. Perineal section should be done when there was œdema, or pus in the urine. He put off the passage of the sound, until the third or fourth day. Epididymitis was always a possible complication, and some patients could not at all tolerate the use of sounds; he did not think it due to the passage of the sound through the deep urethra. Recontraction was very apt to occur, and was due to incomplete division, and if it did occur, it would probably do so within a month. He had seen cases of stricture treated by gradual dilatation, in which there had been no contraction after ten years. He spoke favorably of rapid dilatation advocated by Holt.

Dr. A. G. Gerster said he was glad to hear Dr. Otis say, that there existed cases of stricture in which complete division was not possible. A stricture of many years standing was of a different type, from one which had existed only four or six weeks. In these old cases, the peri-urethral tissues, the skin, and finally the scrotum were involved and it was folly to hope that an operation could cure such cases. The best thing that could be done, was to maintain a moderate calibre of the urethra by dilatation. As a matter of practice, he advised division, because it was the most rapid way of curing stricture. He considered internal urethotomy a safe operation. He thought Dr. Brewer passed sounds too soon after operation, and he advised the strictest asepsis to prevent cystitis and such like complications.

Dr. L. B. Bangs thought internal urethrotomy a safe operation, but he thought due regard should be paid to the after-treatment. He advised the passage of the sound within the first twenty-four hours after operation.

Dr. R. M. Fuller thought that all fibrous strictures should be cut, and cut thoroughly, though he advised the passage of a sound sometimes to ascertain whether the strictures were dilatable or showed a tendency to contract. He thought a sound should be passed on the day after the operation.

Dr. Hopkins thought the divider should be used in strictures of old men, many of whom suffered from chronic cystitis.

Dr. Bryant had had experience in both dilatation and incision. He used dilatation where gleet existed, or until the patient became tired of it. He believed internal urethotomy a good operation, but did not believe in its indiscriminate use. He thought the sound could be used the first or second day after operation.

Dr. Alexander advised irrigation of the urethra, with borax solution for the first week after operation. He advised the use of the sound on the first day after operation. Hæmorrhage was only dangerous when the bulbous portion was cut.

Dr. Otis said, that in the event of hæmorrhage, pressure should be made as near the cut as possible, and he advised the introduction of a tube with external pressure.

Dr. Brewer said, that if the passage of the sound after operation was delayed, the pain would be much worse.

THE INJECTION TREATMENT OF ACUTE GONORRHŒA.

Dr. Friedheim, in the *Archiv. für Dermat. und Syph.*, No. 4, 1889, gives the results of a series of experiments carried on to determine the relative destruction powers possessed by a great variety of different local remedies, against the gonococcus, as well as their influence upon the inflammatory condition, and their efficacy in causing desquamation of the urethral epithelium—and through the latter of mechanical elimination of the microbes. In 29 cases he used bichloride of mercury solution (1-10000 to 1-15000). In 14 the treatment had to be intermitted because of the pain, deficient urination, bloody urine, œdema, or other ill effects; and in 11 the treatment had to be stopped entirely. In 29 other cases, injections of 1-20000 were used without necessitating interruptions, but in some there was pain. An addition of common salt lessened the pain, but at the same time the anti-bacterial effect. No remedy produced more rapid destruction of gonococci superficially situated than 1-30000 sublimate solution, which made them disappear after a week's treatment. In weak solutions, this remedy is an astringent in strong a caustic. In 29 more cases, salicylate of mercury (1-270) was used, and was found to be slower but more lasting in its results than the sublimate. Zinc, lead, and tannin had no anti-bacterial results. Bismuth, permaganate of potash, resorcin, salicylate of soda, antipyrene, naphthol, thalline sulphate, and carbolized lime-water were used, but without encouraging results. The best anti-bacterial results were obtained with nitrate of silver. In proper dilution it lessens the inflammation, but when too strong it increases it. In the Neisser clinic, acute gonorrhœa is treated with injection of silver nitrate, 1-4000 to 1-2000. In the first few days, the discharge becomes thicker and more purulent, but after four days it becomes less, thinner, whiter, and contains more epithelium. The gonoccoci decrease in quantity rapidly. The injection is used at first four or six times daily, and gradually decreased to one a day, which should be kept up for some time. In some people even weak (1-5000) injections will not be well borne. If complications arise, the injection is kept up, especially in epididymitis. It is believed that complications are prevented in a measure, by anti-bacterial measures. In 1,200 cases epididymitis was present only in 164; only once did it develop in the whole number of cases treated by nitrate of silver injections, in 21 other cases it developed while the patient was under treatment, but in the remaining 142 cases it was present before the treatment was begun. The other complication also existed prior to treatment.—From the *Journal of Cutaneous and Genito-Urinary Diseases.*

THE CURABILITY OF PHTHISIS. By Thomas Harris, M.D., London, M. R. C. P. From the *British Medical Journal.*

In addition to the observations at the bedside, we possess another and valuable means of forming an opinion as to the curability of pulmonary tuberculosis. Pathologists have frequently noted the frequency with which signs of involuted tubercle, in the shape of fibrous cicatrices, old, dry, caseous spots and calcareous deposits, are found in the apices of the lungs of persons who have died from various forms of disease or from injuries. During the period from October 1, 1887, to September 30, 1888, the author made about 200 post-mortem examinations. This number was reduced to 139 cases available for statistical inquiry into the frequency with which signs of involuted tubercle are met, the other cases being thrown out because (1) some were under twenty years of age, and we could hardly expect to find involuted tubercle in children and youths, because it is not a disease of young people; (2) because some died of phthisis, and their lungs were so badly diseased it was impossible to judge; (3) because only a partial examination was allowed in some. In these 139 cases there were relics of former active tuberculosis in 54, and in the remaining 85 no relics could be found. This was the result of naked eye examinations; the microscopic examination of some of the cases revealed that the process was not entirely quiescent. But as the result of the microscopic examination of cases above twenty years of age, we found that 38.84 per cent. had signs of involuted tubercle. The following are the ages of the bodies examined and in which signs of involuted tubercle were found :

Age of body examined.	Involuted tubercle found in.	No signs of former tuberculosis in.	Total number of examinations.
20–29 years,	7 cases,	19 cases,	26
30–39 "	11 "	24 "	35
40–49 "	17 "	19 "	36
50–59 "	11 "	15 "	26
60–69 "	7 "	7 "	14
70 yrs. and upwards,	1 case,	1 case,	2
	54 cases.	85 cases.	139

From this table is will be seen that the greatest number of cases of involuted tubercle were found in bodies between 40 and 50 years of age. The appearances presented by the involuted tubercle in the 54 cases varied considerably. In some cases there was merely a puckered, fibrous cicatrix, surrounded by emphysematous pulmonary tissue, but in the majority we also had a caseous or caseo-calcareous focus of greater or less dimensions. These caseous foci were well and sharply circumscribed from the surrounding lung tissue, and often had a distinct capsule. It is not common for fibrous tissue to be the sole remains of former tuberculosis of the lung. Few pathologists of the present day would deny that the caseous and caseo-calcareous foci did really represent former active tuberculosis. But before we regard a fibrous cicatrix in the lung as representing involuted tubercle, we must consider, first, its position; and, secondly, what other causes give rise to cicatricial tissue. In all the cases above recorded the cicatrices, as well as the caseous foci, were found in the apices of the lungs, and never were considered as an instance of involuted tubercle when it was only found in some part remote from the apex. There are rare cases where we get limited fibrous change, which might be mistaken for the remains of former tuberculosis. Fibroid induration resulting from an infarct, the healing of an abscess, or local point of gangrene, induration resulting from the encapsulation of parasites and foreign bodies, are rare, and would not be likely to cause confusion. Apex cirrhosis from unresolved croupous pneumonia and syphilitic induration are rare. Anthracosis is more common, and may give rise to a nodular or a more diffuse induration of the lung apex.

One condition, however, which is often found over one or both lung apices, which should be excluded until the knowledge of its pathology is more perfect, is the slight thickening of the visceral pleura over one or both apices, and is seen over the extreme apex, and extends over a spherical area half an inch to two inches in diameter. The surface of the pleura is smooth, of an opaque white color, and generally non-adherent. The pleura is thickened to the extent of about one-eighth to one-quarter of an inch, and is often calcareous. In children he has never seen it, rarely in young adults, and quite often in middle and old age. It seems to be a chronic, pleurogenic, very superficial, interstitial pneumonia, due to an unknown cause. Authorities differ widely as to the frequency with which signs of healed phthisis are found in the lung—from 4.7 to 51 per cent. This difference is due to our not being agreed as to what is to be called healed phthisis; the ages also of the bodies examined by various observers varied considerably; and, lastly, it makes the greatest difference whether this point was specially looked for and noted: small, caseous foci in the apex of the lung are easily overlooked, or, if seen, are not liable to be recorded.

On examining these specimens microscopically, the fibrous tissue was found to form a capsule round the caseous spots. Several specimens showed signs of activity which to the naked eye were apparently quiescent. In some cases all the elements of tubercle could be seen, even the typical grain cells. How many of the 54 cases which seemed to be quiescent would, under the microscope, have been proved to be a chronic process the author does not know, for all the specimens were not saved; but he thinks it would materially lessen the percentage. Microscopic examination showed another change in connection with these old tubercular foci which indicates the tendency of foci which are quiescent to again become active. A number of sections from different foci of obsolete tubercle were examined for the tubercle bacillus, but generally with negative results. Negative results in such cases are of little value, for the bacilli may be present and not be seen, and our methods of striving for the tubercle bacilli in sections are not very satisfactory. It is probable that many of these foci contain no bacilli, but may contain their spores, and there is little doubt that these foci of old tubercular processes are quite dangerous to the person in whose body they exist. In a considerable number of cases of phthisis we have an arrest of the disease for awhile, and a subsequent starting of the quiescent tubercle into activity. Another danger in these cases of healed phthisis is the risk of acute miliary tuberculosis as a result from the absorption from the old tuberculous focus. The more complete the fibrous change and the calcareous deposit, the less the danger to the patient of local or general tuberculosis. Keerlow thinks that the only indications of perfectly healed phthisis are those foci where there remains simply fibrous tissue or perfectly calcified caseous foci, and that the imperfectly calcified caseous foci possess all the properties of tubercle, and are a source of danger to the patient.

In seven of the 54 cases of involuted tubercle death was due to active tuberculosis of the lungs or other organs. A very common cause of death in these cases of quiescent tubercle was malignant disease, either carcinoma or sarcoma, and it caused death in 13 of the 54, whereas in the other 85 only seven died of it.

In the Royal Medical and Chirurgical Society, on December 10, 1889, Mr. Arthur E. Nevins called attention to (1) the frequency of the association between heart disease and lesions of the pelvic viscera in women; (2) the great predominance of mitral stenosis over all other heart lesions in such cases; (3) an attempt to classify the lesions of the pelvic viscera in relation to the frequency of their coincidence with heart disease; (4) the diagnostic importance of knowing the condition of the heart in many diseases of the pelvic viscera.

Of 419 cases of pelvic disease, 111 (26½ per cent.) had symptoms of organic heart disease, and, with one exception, it was the mitral orifice and valve that was affected. Of these 111 cases, 93 had mitral stenosis, 29 mitral regurgitation, and 11 had both mitral stenosis and regurgitation.

Dr. Barnes said it showed the hopelessness of looking at one organ of the body only. It is sometimes difficult to say which was the original disease, yet he contended that cardiac lesions often followed in uterine disease.

Dr. Douglas Powell spoke of the frequent association of mitral stenosis with congestion of other organs. Menorrhagia was a common sequel.

Dr. William Duncan said that he could not believe that erosions and lacerations of the cervix, cysts of the broad ligament, etc., were other than coincidences. In some cases of hæmorrhage and inflammation heart disease played an important part.—*From the British Medical Journal.*

CHLORALAMIDE AS A HYPNOTIC. By W. Hale White, M.D., F. R. C. P.

The author has recently used chloralamide in 20 patients suffering from various illnesses, in all of whom insomnia was a troublesome symptom. In all but two—one suffering from delirium of cerebral hæmorrhage, and the other from rheumatic fever complicated by delirium tremens and salicylic poisoning—the drug produced comfortable sleep. In some cases there was great pain, yet it produced sleep. A woman with thoracic aneurism preferred it to morphine. He had never seen depression or headache follow its use. It produces sleep in from a quarter of an hour to two or three hours. The patient usually slept throughout the night. In one case the patient did not go to sleep until the next morning after a dose given in the evening, and he thinks the delayed action was due to delayed absorption, since it was given in water, and is very insoluble in it. He now always gives it with spirits.

The taste is slightly bitter. It should not be given with alkalies or hot water. The dose is from 20 grs. to 60 grs. The advantage over sulfonal is the cheapness.

ABSTRACT OF DR. E. F. BRUSH'S PAPER ON THE "COINCIDENT GEOGRAPHICAL DISTRIBUTION OF TUBERCULOSIS AND DAIRY CATTLE," read at Albany at the meeting of the State Medical Society, February 5, 1890.

The Doctor began by stating that if he could show by reputable authority that the geographical distribution of human tuberculosis coincides with that of the bovine disease, the inference would be that they stood to each other in the relation of cause and effect. In studying the geographical distribution of pulmonary consumption the necessity for separating imported from indigenous cases in any table of statistics was absolute in order to reach any conclusions as to the habits of the people and their effects with reference to the disease. Many other diseases are conveyed to the human race by animals where no doubt exists, but in the case of tuberculosis the slow development of the disease is a disturbing factor. The danger of animals being infected by man is exceedingly small; the danger of man's being infected by animals is practically the only danger and this can be avoided. He thinks that the proposition for isolating human consumptives is leading us away from the chief danger. He shows that in lands like Egypt the indigenous inhabitants retain immunity while associating for long periods with consumptive immigrants, while on the other hand in regions like Australia and the Sandwich Islands the inhabitants have become infected after the introduction of dairy cattle. The best dairy cattle breeds, he argued, are the tubercular breeds, while some breeds not classified by the breeder as dairy cattle are exempt from tuberculosis owing to their vigor and health. In all dairy countries the prevalence of tubercular consumption is a settled fact, while the only countries at all in doubt are those where the dairy consists of other than our domestic cows. Referring to China he spoke of the pure Chinese as a people who did not use milk while the Tartars in that country were meat and milk consumers and, therefore, the observations of medical men are very confusing and they confess that they cannot understand why the disease prevails among the dominant Tartar class and not among the poorer Chinese, who, according to all preconceived notions, ought to be tubercular. In South America where cattle are exceedingly numerous, but the use of milk almost unknown or used only after being boiled, the natives still enjoy an immunity. The Doctor then taking a geographical square of ten degrees embracing Spain and Morocco contrasted the two countries as the climatic conditions must be pretty nearly equal, but Morocco where there are no European dairy cows is exempt from tuberculosis; while in Spain and Portugal, where dairying is carried on in the European style, tuberculosis prevails. The Doctor ended by saying, as a physician and as a cattle breeder, that there was no great necessity for a disturbing alarm because the benefits conferred upon us by the bovine race far outweighed the burden of disease. If there were no way of remedying the disease he would be decidedly in favor of letting affairs remain as they were. He expressed, however a strong opinion that dairy and beef cattle could be bred in such a way as to eliminate tuberculosis but that this could only be done by increasing the price of both beef and milk.

CLINICAL RECORDS.

TWO CASES OF CÆSAREAN SECTION BY THE SAENGER METHOD.

By H. H. Vinke, St. Charles, Mo.

On the 13th day of March, 1888, I was called upon by Drs. Johnson and Bruèra, two experienced *accoucheurs* of our city, to perform Cæsarean section on a young woman who had been in labor two days.

The woman was a primipara, was about 20 years of age, and had a greatly contracted pelvis, the result of hip joint disease in her youth. Owing to her long suffering, to ineffectual attempts at delivery by forceps, and the extensive use of chloroform and morphine to allay suffering, she was much exhausted before the operation, the temperature being 101° and pulse 120° at this time. By the light of the only lamp in the house we operated on her about 12 o'clock at night. The operation lasted one and a quarter hours. After opening the abdomen, the uterus was pulled out of the abdomen and wrapped up in towels, wrung out in corrosive sublimate solution. A rubber tube was applied around the lowermost portion of uterus to control hæmorrhage. The incision into the womb was made with a knife for an inch or two, and then extended upwards with a pair of scissors. There was some hæmorrhage, but not at all alarming. The wound in the uterus was probably four and a half inches. From this wound the arm of the child protruded ; the hand introduced into the uterus readily found a leg of the child, by means of which it was extracted. Then the placenta was readily peeled off and delivered.

Dr. Bruèra took charge of the child, and after some attempts at resuscitation, the latter began to breathe. The uterine cavity was washed out with an antiseptic solution, and the uterus wound carefully closed with about twelve deep and twelve superficial Lembert's sutures. The peritoneal cavity was now carefully sponged out, the abdominal wound closed and a simple dressing applied.

The patient rallied well, pulse 114° after the operation, and fairly full. The next morning patient was suffering considerably and the use of morphine continued, one-fourth grain at a dose, to be given frequently enough to control the pains. Patient had vomited once during the night. Temperature 101°, pulse 120°, urine was withdrawn by catheter. In the evening temperature and pulse the same as in the morning. Patient had passed urine just before our arrival. In the morning of the second day we found her very drowsy, but could be readily aroused. She was then perfectly conscious and frequently called for her child and desired to nurse it. We now learned from the attending nurse that she had taken in all probably three grains of morphine the day before and after the operation. She did not complain of any pain, did not vomit, and took milk and brandy whenever offered to her. Pulse and temperature the same as on the day before.

Altogether her condition was still favorable and we expected the drowsiness would wear off during the day. Morphine was discontinued. At noon and in the evening her condition was still favorable, although she was getting more drowsy, the pupils were contracted to the size of a pin's head, and breathing slow and labored. On the third morning she was evidently sinking. Breathing continued labored, pulse quicker and weaker, and temperature 102° in the vagina. In the evening, just seventy hours after the operation, she died. The reason why we resorted in this case to Cæsarean section in preference to cephalotripsy was the circumstance that the pelvis was so contracted, and the head so high up, that the latter operation in all probability would have killed both mother and child.

It is but natural that whenever an operation proves fatal we are anxious to attribute the fatal issue to any other circumstance but the operation itself. It is my honest conviction, however, that in this case had the operation been done earlier, had patient had less morphine, which she seemed to bear badly, and had she had more intelligent nursing, the result in her case might have been different. The temperature never rose above 102°, and there was no evidence of peritonitis up to the last. *Post-mortem* section was not permitted; the abdominal wound however, had healed by first intention, with the exception of the lower angle of the wound, where a drainage-tube had been inserted.

The second operation was done in a young woman æt. 21 years. She had been in labor twenty hours, and forceps had been used four or five times, but they invariably slipped. During one of the attempts at delivery by forceps the vagina was extensively torn. This complication rendered any further attempt at delivery through the vagina so hazardous, that we considered the dangers of craniotomy to the mother greater than those of Cæsarean section. The operation lasted forty-five minutes. Patient rallied well; pulse 94, temperature 100½ after the operation. The temperature never rose above 102°. On the morning of the second day she began to vomit, and there was considerable tympanitis. Large doses of sulphate magnesia were given, without result. She died on the evening of the third day, in my opinion of what German authors term darm-paralysis, a condition which is sometimes met with after abdominal sections. Both children are living and well. In our first case the pelvis was so much contracted that no other operation but Cæsarean section could reasonably be entertained. In the second case craniotomy might have been done with greater safety to the mother than Cæsarean section, if the vagina had not been found extensively torn.

I very much regret that in the first case the urine was not examined and the condition of kidneys not inquired into; but in regard to the use of morphine, I am convinced that it is always contraindicated after grave operations, as it has a tendency to lower the vitality, particularly so after abdominal sections.

Both were "Saenger" operations, without the removal of any part of the muscular wall of the uterus.

The different steps of modern Cæsarean section may be briefly summed up as follows:

1. Opening of abdomen. Incision to extend from two to three inches above umbilicus to within one and a-half inches of symphisis pelvis.
2. Turning of uterus out of abdomen, and applying of rubber tube to control hæmorrhage.
3. Opening of uterus, removal of child and placenta.
4. Suturing of uterus.
5. Placing a drain through the cul-de-sac of Douglas.
6. Closure of abdominal wound and application of some simple dressing.

Objections to the placing of a drainage-tube through the cul-de-sac of Douglas might be urged, on the ground that it would favor infection through the vagina. Dr. A. Martin, of Berlin, told me last summer, however, that he invariably resorted to this particular form of drainage in cases where pus escaped into the peritoneum, or when he expected the secretion of a large quantity of serous fluid, Durchschwitzungen des Peritoneums, and in his extensive practice he has never had cause to regret it; but on the contrary, is satisfied of having saved many lives by this simple measure, that would otherwise have been lost. For these reasons it would seem therefore to be a rational and judicious procedure.

From a study of a review of recent reports from Prof. Carl Braun's clinics, which I found in the May issue of the *American Journal of Medical Sciences*, bearing upon the subject of "Cæsarean section and its relation to craniotomy and turning," the following conclusions may be arrived at: Turning is, of course, limited by the amount of contraction present, and it is doubtful whether it should be resorted to in cases where the antero-posterior diameter is less than three inches, and is often impossible in a comparatively roomy pelvis, in cases where the membranes have ruptured hours before turning is attempted. At "the K. K. Wiener Klinik für Geburtchülfe and Gynækologie" this operation has a mortality of about 2.3 per cent.

Craniotomy at this institution shows a mortality of 9.1 per cent at Berlin 13.9 per cent. It may be carried out in pelves as narrow as two and four-fifth inches. Cæsarean and Porro-Cæsarean sections have had a mortality of 41.2 per cent. During the year of 1888, however, only one case in six died, reducing the mortality to about 17 per cent.

Leopold, however, has done twenty-three Cæsarean sections, saving all children and losing only two mothers, or 8.6 per cent. Cæsareans become imperative—outside of the presence of a tumor in the vagina, exostosis cancer of neck of uterus, etc., conditions which frequently call for it, in cases where the pelvis is so contracted that the child cannot be extracted, either dead or alive through the natural passage. When the conjugate diameter is more than two and three-fifth inches, cephalotripsy is a safer operation for the mother, than Cæsarean section, whereas in cases where the conjugate diameter is less than two and three-fifth inches, Cæsarean section would seem to be the safer operation for the mother. This of course leaves entirely out of consideration the welfare of the offspring. Although it cannot be denied that at the time, the life of the mother is much more important than that of the child, it would be well nigh inhuman not to give it some consideration. In fact there is but little doubt that it is unjustifiable to kill the child, when we are certain that we can save its life without greatly increasing the dangers to the mother.

PROLONGED GESTATION (INDUCED LABOR)*. By Dr. Armstrong.

In narrating a case of prolonged gestation, I confess that I hesitate a little, owing to the uncertainty of obtaining accurate data so as to place much reliance on the authenticity of cases of this kind.

From a previous history of protracted gestation on two occasions, I was led to induce labor in this case within a fortnight of what would have been the normal term.

I will quote the case very briefly, as was stated to me by a most intelligent mother, who kept a diary.

The calculations date from the cessation of the last menstruation.

First Child.—Female; dated from 20th November, 1879; born 4th September, 1880; gestation, 289 days.

Second Child.—Female; dated from 25th March, 1882; born 21st January, 1883; gestation 303 days.

Third Child.—Female; dated from 3rd April, 1884; born 11th January, 1885; gestation, 284 days.

Fourth Child.—Female; dated from 6th March, 1887; born 18th January, 1888; gestation, 319 days.

Mrs M., æt 35 years, pregnant for the fifth time, consulted me relative to her approaching confinement, of which she had a great dread, from having suffered so much at her last. Her three first children, all female, were born alive, and the last—also female—was still-born.

Of her four confinements, I will pass over the first and third as being normal. The second and fourth, however, I think, may be rightly classified as cases of prolonged gestation,

The second confinement was calculated from the 25th March, 1882, to occur about the 29th December, 1882. It took place on the 21st January, 1883, gestation having continued for 303 days—that is, about three weeks beyond the normal limit.

There could be no mistake about this case being authentic, as the husband was absent for three months after conception had taken place, and the confinement occurred nine calendar months and three weeks from the time of his leaving home.

What seemed to be an anomaly was, that the child was very sparely developed, and in consequence the labor was easy and rapid.

The fourth confinement was calculated to take place about the 10th December, 1887, dating from the 6th March, 1887. It occurred on the 18th January, 1888, gestation having continued 319 days, and that is about five weeks beyond the normal limit. The labor was most difficult, and was completed with instruments. The child, a female, was still-born, and the convalescence was protracted several months.

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* Reported at the Liverpool Medical Institution, Dec., 1889.

With these statements before me, and being satisfied as to the normal condition of the pelvis, I advised induction of labor within a fortnight of the normal term.

I gave this opinion for the following reasons:—That gestation having been prolonged on two occasions, might occur again, and a difficult labor similar to the last have to be undergone; that in the event of the child being a male, the labor would most probably be rendered still more difficult; and that for the above reasons, the interests of both mother and child would be best considered by having labor brought on shortly before term.

She accordingly came to Liverpool about three weeks before the expected confinement. After a week's rest I induced labor on the 6th November, 1889—about the 267th day of gestation.

Labor was complicated, in that the position of the child was transverse, necessitating version. It, however, terminated most satisfactorily. The child—a female—was living and healthy, and the mother made an excellent recovery, being able to return home at a distance by the end of the month.

PROCEEDINGS OF SOCIETIES.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN OBSTETRICS AND GYNÆCOLOGY.

Stated Meeting, November 27, 1889.

DISCUSSION ON THE USE OF ELECTRICITY IN GYNÆCOLOGY.

J. E. Janvrin. M.D., in the Chair.

The following papers were read:

General Observations on the Use of Electricity in Gynæcology, by Dr. A. D. Rockwell, of New York.

The Treatment of Certain Pelvic Tumors by Galvano-puncture and Drainage by the Vagina, and Intra-Uterine Galvanization, by Dr. Augustin H. Goelet, of New York.

The Galvanic Treatment of Uterine Fibromata, by Dr. E. L. H. McGinnis, of New York.

Notes Regarding the Treatment of Fibromata by Electricity, by Dr. A. H. Buckmaster, of Brooklyn.

The Value of Bi-polar Faradization in Gynæcology, by Dr. A. Lapthorn Smith of Montreal.

In the discussion which followed the reading of these papers:

Dr. P. F. Mundè, of New York, said that for a number of years he had been much interested in this subject of electrical treatment, and believed he had had ample opportunity to become acquainted with its practical working. He could speak most decidedly in favor of electricity as a therapeutical agent in gynæcology, and had published his views on this subject in an elaborate article several years ago. He had seen more benefit derived from galvanism than faradism in gynæcological practice. He had also found that mild currents used for a long time are, as a rule, more efficacious than strong currents employed for a short time. He used a Leclanchè forty-cell battery. For ordinary purposes he used a small meter registering only twenty milliampères. He had another which registered 500 milliampéres. This he had used a few days ago in treating a fibroid, and had found it faulty and untrustworthy.

With galvanism, placing the positive electrode next to the sensitive part in the pelvis, or on the abdominal wall, he had obtained excellent results in relieving the pain of chronic pelvic peritonitis. In old cases of inflammation with adhesions, with more or less pain in the ovaries and tubes, he had found that the tri-weekly administration of electricity, with the positive current internally, was a decided benefit after a few months of treatment. On the other hand, a number of patients, after several months of such treatment, had received no appreciable benefit whatever, and laparotomy had to be performed. This showed that electrical treatment was not suited to these particular cases. However, he deemed it proper in all circumstances to give patients every opportunity for possible benefit from electricity before subjecting them to a radical operation which, by whomever performed, could never be without an element of danger.

In obscure pelvic pain, due to an inflammatory deposit unrecognizable by digital examination, extending down the sciatic or crural nerves, he had seen instant relief follow the use of electricity after other treatment had failed. While he relied on electricity, and had found it of great benefit, especially in relieving pain, he thought it might be carried too far. He considered the length of time necessary to achieve satisfactory results was a great drawback to the use of electricity. If it was clear, however, that some good was being done, the time was, of course, not lost.

As to the milliampèremeter, though he had two, he was by no means satisfied that it was at all necessary, and was inclined to look upon it as a sort of plaything. When using galvanism for the relief of pain, the sensations of the patient, he thought, were a sufficient guide as to the strength of current to be employed ; but when using the current in anæsthetized patients for galvano-puncture, it was necessary to know exactly the strength.

The faradic current he had found very useful in amenorrhœa, intra-uterine faradization being employed three times a week for this purpose. He had used electricity but once in extra-uterine pregnancy, the interrupted galvanic current being the one employed. He had cured the patient, after nearly killing her by the shock. In pyosalpinx and pelvic abscess, laparotomy and drainage were certainly to be preferred to galvano-puncture. As to uterine fibroids, he had very decided views. He considered that the value of operative treatment in this class of cases was over-estimated. Out of 123 cases coming under his observation, about 50 per cent. had required no treatment whatever, 62 had required treatment, but only eight of this number, in his opinion, had required Apostoli's method, and four others called for galvano-puncture. Apostoli's plan of treatment covered only the intra-uterine use of galvanism, with the clay electrode on the abdomen, the galvano-puncture being not strictly his method.

He had used the Apostoli treatment eight times in three years, and he could honestly say that while he believed it efficient for the removal of pain and the checking of hæmorrhage, and admitted that the patients felt better for its use, not a single tumor which had come under his notice had been much reduced in size. By galvano-puncture he meant puncture through the vagina, and this, in his opinion, was the ideal treatment for the cure of uterine fibro-myoma. The four cases in which he had employed it had been absolutely cured—that is, the tumors disappeared entirely, not a vestige being left. In one of the cases a single puncture gave rise to sloughing, and this sloughing itself destroyed the growth; in the others the cure was directly due to the effects of the electrical treatment. He was, therefore, a decided believer in galvano-puncture. At the same time, he believed it had its risks, and he thought it should never be employed at a physician's office.

Dr. Franklin H. Martin, of Chicago, exhibited a portable battery, and made some remarks upon the use of electricity in the treatment of certain pelvic diseases of the female.

Dr. G. Betton Massey, of Philadelphia, in speaking of the treatment of pelvic cellulitis, said that in one case he had been using simple vaginal applications of the strength of seventy-five milliampères with very good results. In the use of electricity in gynæcological practice he thought too much attention was paid to antiseptic washes. These were not necessary, he thought, if perfectly clean and aseptic electrodes were employed.

He could not agree with Dr. Mundé in his opinion of the milliampèremeter. He considered it of importance if more than five or six cells were employed. As to the sensations of the patient furnishing a guide for the strength of the current, he had seen as active a sensation caused by fifteen milliampères with the negative pole in the uterus, as resulted from 350 milliampères in other cases. In regard to the use of electricity in pyosalpinx, he had met with one instance in which the treatment for endometritis excited a flow of pus. He had reported the case to the Obstetrical Society of Philadelphia, and the patient had since then been quite well.* The passing of the electrode in the direction of the left cornua of the uterus seems to have been efficient in causing the result named.

Dr. Buckmaster read some remarks, prepared by Dr. A. J. C. Skene, of Brooklyn, who was prevented from being present.

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* A very remarkable and easy cure.

Dr. H. J. Boldt, of New York, after speaking of the theory of the bi-polar action of the current on the tissues, went on to say that those gentlemen who absolutely denied any value to electricity were those who had never given it an honest trial. They had no right to operate on any patient until electricity had been given a thorough test. That it would not, however, in every instance even alleviate the symptoms he thought was perfectly true. As to pyosalpinx, he thought that these cases were cured when the tubes were cut out, and not otherwise. When the tubes were distended and the uterine extremities were closed, or when the tubes were agglutinated, what could be expected from electricity? All that could be done then was to remove the tubes by laparotomy. But as long as the calibre of the tubes remained patent, it was well to try everything. Many mistakes, he said, were made in diagnosis, and he thought it was not advisable to be too enthusiastic.

Dr. Goelet in closing the discussion, said he had cured at least thirteen cases by galvano-puncture, which otherwise could not have been relieved except by laparotomy—that is to say, the patients would otherwise have been mutilated; and he thought it was only right to try to cure these patients before mutilating them. By emptying the tubes and the use of the current subsequently, the tubes might be rendered patent. He thought that the pus could be first emptied, and then the removal of the cause of the accumulation of the pus effected. The resolution of the proximal end of the tube could be produced by galvanism of the endometrium, and he was very glad to hear that in this particular his experience had been confirmed by Dr. Massey in the case related. He did not think that we ought to say that the removal of the tubes was a cure of pyosalpinx. It was a mutilation, and not a cure, and in many cases, indeed, the patient's condition was more embarrassing after the operation than before.

He thought that many of the failures with electricity which Dr. Mundé said he had met with were to be attributed to the fact of his having used his currents too weak. Then, again, he thought that Dr. Mundé had made a mistake in regarding the milliampéremeter as a plaything. Many women would bear intense pain and say nothing about it, and electricity might be thus administered in dangerous doses. It was also impossible to estimate the particular resistance of the tissues in every case; and, for these reasons, the meter was always an important auxiliary.

The Chairman asked Dr. Goelet whether his experience of intra-uterine galvanism had demonstrated to him the fact that an occluded tube had become patulous again, and was performing its function in a normal manner. He said that, of course, the fact of fecundation occurring did not imply that both tubes were functionating.

In reply, Dr. Goelet said that he could only assume that complete recovery had ensued from the fact that all symptoms were completely removed, that menstruation became normal, and that there had been no reaccumulation in the affected tube.

REMARKS ON ELECTRICITY IN GYNÆCOLOGY AND A NEW PORTABLE GALVANIC BATTERY.*

FRANKLIN H. MARTIN, M.D., of Chicago.

Apostoli's method, which was promulgated less than three years ago, first astonished, then excited the admiration of the entire medical world. Astonishment was expressed at a method which recommended such extraordinary means, and which claimed such brilliant results. Admiration was excited by the brilliancy of the author's conception and the thoroughly scientific grounds upon which it was based.

The instruments of precision introduced and made necessary by Apostoli's method have enabled us not only to prove or verify the value of his work and to substantiate his startling assertions, but to go on applying the sound principles he has evolved to the relief of many pathological conditions peculiar to the female pelvis.

One of the most important points to settle after the introduction of the high dosage system of treatment was the question of generation of current. We were aware that the ordinary batteries in use would give a maximum current strength through the body, from hand to hand, of but from eight to ten milliampères. Certainly, then (forgetting in practice what we only know in theory), we could not expect to get 300 milliampères with the same instruments. We soon found, however, from practical experience, that we were mistaken and that the battery which gave a current of but eight or ten milliampères through the enormous resistance of the body from hand to hand, would give a marvelously strong one through the comparatively small resistance offered by the abdominal walls and pelvic tissue, with properly constructed electrodes. We now know that the resistance offered by these parts with the clay, or some form of substitute for the clay electrode, is less than 200 ohms instead of 2000, as was originally supposed.

Any battery may be used which will give a maximum electromotive force of fifty volts, with but small internal resistance, which is without vibration, undulation, or interruption, which can be perfectly controlled by the operator, and which can be gradually increased from zero to its maximum strength, and the reverse, without interruption. This includes the ordinary open circuit battery cells employed for office purposes, ranging in number from thirty-six to fifty—according to their electro-motive force. The Leclanché, the Law, and the Diamond Carbon are usually preferred. For all work, except when puncture is required with small exposure of needle surface (thereby increasing the resistance) or when extraordinary strength of current is required, the ordinary twenty-four to thirty cell zinc and carbon chromate of potash batteries, such as are manufactured by the Galvano-Faradic Battery Co., the Flemming, or the McIntosh Battery Co., are sufficient. My battery is the outcome of a series of experiments made with the end in view of bringing forth a small portable battery which would possess none of the objectionable features of the ordinary form and which would do the same amount of work as that required of the office stationary battery.

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* Read before the New York Academy of Medicine, Section in Obstetrics and Gynæcology.

The cell is a form of the chloride of silver cell, of sufficient power to give an electro-motive force of one volt, and an ampèrage of $^8/_{10}$ ampère. So that a battery of fifty cells will do the same amount of work as thirty-six to forty Leclanché cells. A battery of thirty-five of these cells has done all of my outside work for a period of eight months, without change or renewal, and possesses greater working power to-day, because of decrease of its own internal resistance, than when I began. From experiments made with the battery it is estimated that it will run with ordinary use without recharging or without perceptible deterioration in strength from one and a half to two years. As the battery is free from action when not working, it will remain in active condition a length of time in direct proportion to the amount of work required of it. There are two sizes of this battery manufactured by the McIntosh Battery Co., of Chicago, one of thirty-five cells and one of fifty cells. The fifty cell battery will generate a current of 300 milliampères with the Apostoli electrodes or any of the approved modifications.

Next to the treatment of fibroid tumors of the uterus by galvanism, I have found the greatest satisfaction in treating inflammatory exudation in the pelvis. This includes all cases, from the simple thickening of one or both broad ligaments to complete fixation of all the organs of the pelvis, with a thick unyielding exudate matting everything together. All acute inflammation, except secondary points arising from the irritation of already hardened exudate, should have disappeared in these cases before treatment is instituted.

I speak advisedly, after a long experience with a large number of such cases, when I say that I do not believe that there is a case of the kind described which, if submitted to a persistent course of applications of strong doses of galvanism in the proper manner, cannot be cured. The exudate will gradually but perceptibly disappear, the pain from pressure upon nerve fibres and nerve points will rapidly diminish, sympathetic disturbances will be relieved, displacements caused by contracting bands will gradually give way, and the general mobility of the pelvic organs will return, while coincidently the general health is restored from the effect of the electricity on the general system.

The best results are obtained in these cases from comparatively strong doses of from 75 to 125 milliampères. The object must be, in applying the electrodes, to include between them, as far as possible, the area of greatest disease. This, occasionally, will admit the use of an intra-uterine electrode as the internal point of departure. When an intra-uterine electrode is employed, one of as large surface as practicable should be selected, to avoid undue concentration and cauterization, which would give rise to subsequent cicatricial contraction. In the majority of these cases, however, an intra-uterine electrode is not admissible because of the position of the exudate. In such cases it is necessary to employ a vaginal electrode so constructed that a thorough diffusion of the current is obtained, in order not to cauterize the mucous membrane of the vagina. For that purpose I employ an electrode composed of a slightly curved, insulated staff terminating in an exposed metal ball which is thickly covered with absorbent cotton moistened with water. By this simple instrument I can select any particular portion of the vagina required, with a soft yielding contact surface and thorough diffusion. The cotton is applied to the instrument by folding a thick piece over the metal bulb, and fastening it around the staff at its point of attachment with the metal by means of a small rubber band.

This instrument can be inserted with or without a speculum—more easily without, with the patient upon her back and the hips drawn near the edge of the bed or table. If a speculum is used, it should, of course, be withdrawn before the treatment is commenced. When the internal electrode is in place, it should be attached to the negative pole of the battery. Having previously adjusted the external abdominal electrode and attached it to the positive pole, the current should be gradually turned on, employing every precaution to prevent the slightest break or shock, until a strength of from 75 to 125 milliampères has been reached, the maximum strength tolerated varying between these figures with the varying sensibility of patients. The sitting should last from five to eight minutes, when the current should be gradually reduced to zero and the instrument removed. The treatment should be given every second day. The staff of the electrode is easily unloaded of its cotton by means of the dressing forceps, thus making it possible to observe perfect cleanliness. Cleansing the staff thoroughly, and the use of a fresh covering and fastening each time, of course, being imperative.

This treatment persistently carried out will accomplish exactly what I claim for it. It will not only absorb the slight exudations which merely produce thickening of the vaginal vault, but it will cause the rapid disappearance of large, well-defined masses situated in the broad ligaments or in Douglas's cul-de-sac. It will cause ovaries, large and tender from the irritation of inflammatory products, to assume their normal condition by removing the cause of the trouble. It will cause the disappearance of strong bands of adhesion, no matter where situated.

It has long been known that *mild* currents, persisted in for a long time, would slowly cause disappearance of superficial exudates, but it hardly held its own with the old treatment of iodine applications and the glycerin plug, owing to the time and cumbersome apparatus required. But a cumbersome apparatus *alone* is no longer a sufficient excuse to justify us in ignoring the rapid and complete results obtained with *strong* doses, and the other advantages offered by Apostoli's instruments of precision.

I am aware that many assertions of a fact do not carry the weight of a recitation of a series of well-authenticated cases possessing evidences of conscientious reporting and of independent verification. I can only say in self-defence, that I have a series of just such cases in preparation for publication, in which the diagnosis and, afterward, the results were verified in almost every instance by eminent gynæcologists.

My experience in the treatment of fibroid growths of the uterus by electricity amounts, in round numbers, to two hundred cases. In that number of cases, not more than five failed to continue the treatment until results could be estimated. Of those who continued treatment and make a fair test of its value, up to the present time but three have failed to obtain relief. One of these was a large, soft, spongy, rapidly growing subperitoneal growth, with a suspicion of malignancy in a patient who was so sensitive to the treatment as to be unable to receive a satisfactory dose. The second was a marked hæmorrhagic case of a submucous variety, composed of many centres of development, which repeatedly discharged itself in small masses from the uterine canal, until finally the patient became discouraged and ceased treatment. The third case which I have been unable to influence favorably is one of a large, regular subperitoneal variety, which I have persistently labored with by means of the vaginal galvano-puncture with remarkably strong doses. I am unable to account for the stubbornness exhibited in this latter case, and shall recommend surgical interference.

I am fortunate, considering the great number and variety of cases treated, to be able to record no deaths; my results, on the whole, have been exceedingly gratifying. About eighty-four per cent. are symptomatically cured, with an additional per cent. of actual cures. About fifteen cases are still under treatment.

My methods, except in unimportant minor details, are in direct imitation of my friend and master, Apostoli.

There were two varieties of cases that gave me a great deal of perplexity in my earlier work, because I could not find their counterpart in Apostoli's publications. The first was a large interstitial variety of fibroid with a marked hæmorrhagic tendency, in which the patient would not tolerate a strong dose. In these cases the uterine canal is of great depth, and the hæmorrhagic surface of necessity very extensive. In order to check hæmorrhage in such a case, a strong dose is imperative, unless some means of concentration is employed. Of course, if the ordinary platinum sound electrode is employed, of sufficient diameter and length to cover the whole internal surface of the uterine canal, a current of enormous strength must be employed to get sufficient concentration at any given point to cause coagulation and change of tissue, so as to check hæmorrhage, in other words, a certain intensity is required, and the intensity is in direct proportion to the strength of the current and in inverse proportion to the area of the electrode. As it was impracticable to employ a dose of more than 100 to 200 milliampéres in many cases, on account of peculiar sensitiveness, I devised a means of internal concentration, or of limiting the area of the electrode.

A series of experiments, which I have already mentioned in an article read three years ago at the International Congress, proved that a current of twenty-five milliampéres was necessary on an average for each square centimetre of internal surface, exclusive of the positive platinum electrode, in order to accomplish coagulation sufficient to check hæmorrhage. Upon that basis I constructed electrodes with a surface of four square centimetres, by means of which definite results were assured, and with which it was unnecessary to employ more than 100 milliampéres current, different portions of the canal being treated in turn, at successive applications, until in time all have been covered. These electrodes are easily cleansed by means of a nail-brush and are constructed so that they will not be injured by strong antiseptics. Their flexibility alone is a great recommendation.

The other class of cases fortunately comprises but a small per cent. of all. They are distinguished by great sensitiveness and profuse hæmorrhage at the menstrual period. They tolerate but a small current and are even severely prostrated by the small dose they are able to bear. These cases, of course, cannot be expected to improve unless they are enabled to take a decided dose, and the nervous prostration is so severe when such a dose is forced upon them that it renders the treatment intolerable. A marked hysterical element is often present in these cases. The subsequent prostration is produced no doubt by strong reflex disturbances. I have found that they are readily improved if means are adopted by which powerful doses can be administered at not too frequent intervals, and at the patient's room where she need not be disturbed for six hours following treatment. I therefore, get the dimensions of the uterine canal, and an electrode is constructed to fit it. I estimate its surface area in square centimetres, and estimate the strength of the current at twenty-five milliampéres per centimetre that will be required at each sitting. I then order the patient to repair to her bed one hour before treatment, and to take a full dose of morphine and atropine. If I find, upon turning on the current, the patient will not tolerate the dose required, I ask an assistant to saturate a handkerchief with chloroform and give the patient just sufficient to enable me to attain my object. When that has been reached, the chloroform can be withdrawn, the patient usually being able to stand the electricity after it has once reached its maximum strength. The current is then allowed to operate for ten minutes at the full strength required, when it is gradually withdrawn, and the patient instructed to remain quiet for at least six hours.

If it is not deemed prudent to give the opiate, chloroform alone, of course, can be employed; but I employ the opiate because, as a rule, the patient requires nothing more.

By this method I have repeatedly given doses varying in strength from 200 to 400 milliampères, and prostration seldom follows. The dose is repeated in from six to ten days.

SANITARY.

PUBLIC BATHS.—As in modern statesmanship, the great problem is the attainment of "the greatest good to the largest number," so it is the aim of modern medicine to achieve the same end by the prevention rather than by the cure of disease.

The study and practice of sanitary medicine, illumined as they are by marvelous discoveries in the sciences and arts, attract the best minds in our profession, because of the brilliant possibilities of this interesting field.

The improved sanitary condition of the civilized world, chiefly evidenced by the absence of those terrific epidemics which formerly scourged the most populous countries, has long been our boast. Nevertheless, the civilized world is far behind former ages in one great essential of sanitation—personal cleanliness.

Startling as this proposition may seem, it is open to absolute demonstration by historical data, as is clearly shown in a recent address of Dr. Lassar.

The recognition of the vital importance of personal cleanliness may be traced into the remotest antiquity. Zoroaster and Moses made it a law whose infringement was severely punished, and indeed, all Asian and Semitic nations had it impressed upon them by their ceremonial acts. These facts are so well known that they need only to be referred to here.

In the latter centuries before Christ, bath-houses were introduced from Greece into the smallest Italian towns, not only for ordinary use, but many were erected on the most luxurious scale. Seneca tells us that the walls of some of these establishments were covered with mirrors, and the floors with Numidian marble; the basins, surrounded by rare stones, received water from silver faucets; magnificent statues and pillars abounded, and the water fell in immense quantities in cascades upon the bather, whose eye meanwhile rested upon the most ravishing landscapes, exposed to view through the spacious windows.

Vispanus Agrippa built one hundred and seventy free baths in one year. Others were offered to those who were able to pay, for the price equivalent to one cent of our present currency. Nearly every well-to-do householder had his own private bath. From the time of Augustus to that of Constantine fourteen hot baths were erected, each one of which accommodated thousands of bathers. In Rome alone there existed, during the residence of Constantine in Byzantium, eight hundred and fifty-six free baths, which consumed seven hundred and fify million gallons of water.

Pliny asserts that for six hundred years the people of Rome needed no physicians, because they bathed.

These grand structures, however, fell under the savage destruction of the uncultured multitudes which crushed out the power of Rome, and trampled upon its great works of art. The world has not yet recovered from the effect of this invasion of the field of hygiene.

To-day the paradox exists that among people whom we are wont to regard as uncultured, the resort to water for personal cleanliness is more in vogue than it is in our midst.

In Russia the poorest peasant would not don his holiday attire, without resorting to his village bath. In Japan hot baths are accessible to the people in the very humblest villages.

This glaring defect in our boasted civilization has been again and again recognized, and the press, that most potent agitator of the rights of the people, has struck sledge-hammer blows in behalf of public baths.

The interests of good sanitation demand constant and unceasing agitation of the subject of public baths. The family physician, armed with the historical facts briefly enumerated and imbued with the consciousness that cleanliness of person among the lower classes will surely tend to check epidemic diseases at the very portals of its usual entrance, may contribute vastly to the dissemination of ideas that will surely bring valuable practical results.

If public baths could be made as accessible as they were in the palmy days of Rome and Greece, the health and happiness of the laboring classes would be greatly enhanced; the unrest and discontent which are but the muttering of a storm that will sooner or later sweep with devastating fury over our prosperous land, would be allayed by the recognition of the fact that they whom fortune has favored bear a kindly interest in those who are tottering under the heavy burden of poverty and its inevitable train, misery and death.

A feeble step in the right direction has already been taken by the public baths which some of our cities offer during the summer months. But the number of these baths is ridiculously small, and they are entirely absent during the winter months when they are most urgently needed.

Lack of water and room, and the large expenditure of money required, offer the most potent obstacles to the extension of public baths. All these obstacles may be readily surmounted by the adoption of the rain and douche baths, which have been successfully utilized in the German army and in several large German cities. These baths are simply arranged, built in the most economical, yet substantial manner, and divided into spaces just large enough for an adult to stand and move comfortably in. The bather bathes himself with soap, and turns on the cold or warm water, which falls upon him as a spray or douche. The mechanical action of the stream, aided by his own efforts, rapidly cleanses the body, and the water flows away over the latticed flow into a receptacle, which conveys it to the water pipes. The time, consumption of water, and attendance are thus reduced to a minimum; cleanliness of the bathing-room is readily obtained, and the danger of contagion, which would deter many from resorting to tub baths, is entirely obviated.

Simple douche baths of warm soap-water should be attached to our public schools, and the afternoon hours should be devoted to the task of cleansing the bodies of the little ones. The warm soap douche would be a great boon to the poorer and laboring classes in midwinter, when they rarely, if ever, have an opportunity, owing to the narrow limits of their dwellings to cleanse their bodies. To the middle classes the cheapness of such a bath would commend itself. The construction of a few warm and douche baths in our large cities would popularize bathing and protect the community against many diseases, without a large outlay of the people's money.

PHARMACY AND THERAPEUTICS.

TWO NEW TÆNICIDES.—In spite of the long list of substances which have been recommended as tænicides, but few are worthy of confidence. An addition to this list of substances of one entitled to the claim of reliability cannot but be regarded as desirable. Two substances have claimed admission to this list in comparatively recent times. One of these, the areca catechu, has already been alluded to in a previous issue of the *Gazette* (March 15, 1889); the other, the fruit of the cocos nucifera, is a novelty, though it likewise received mention in the *Gazette* for December 15, 1888.

The fruit of the areca catechu, with the leaves of the piper betel, forms part of the masticatory or so-called betel nut so much used in the extreme East. The chemical composition of the areca nut has been almost unknown until very recent times. Only lately Bombelon succeeded in extracting a volatile alkaloid closely resembling nicotine which he called arecaine, and which he describes as a colorless oily body, with an odor somewhat resembling that of beef-soup, slight taste, but which becomes acrid and has a strongly-alkaline reaction. It forms salts, and among them a salicylate with an odor of tobacco. According to Bombelon, this alkaloid augments the salivary secretion and diminishes the number of cardiac beats, and also has a purgative action. Jahns, further, has isolated three alkaloids from this fruit—one which he terms arecaline, the other arecaine, and the third which is only obtained in too small quantities to be capable of study (*Bulletin Générale de Thérapeutique*, No. 30, 1889).

The first of these, arecaline, has a compostion of $C_8H_{13}NO_2$, strongly resembling the arecaine of Bombelon, is an oily liquid, strongly alkaline in its reaction, soluble in water, alcohol, ether and chloroform. Its salts are very soluble, while all are crystalline, the bromo-hydrate being the most readily crystallized.

The second alkaloid, arecaine, has the formula $C_7H_{11}NO_{21}H_2O$, forms colorless non-deliquescent crystals, very soluble in water and diluted alcohol. It is not soluble in concentrated alcohol. It is also insoluble in ether, chloroform, and benzol. The watery solution is neutral, and has a somewhat saline taste. This alkaloid combines with acids to form crystalline salts, which are all soluble in water, less soluble in alcohol.

The arecaline is stated to constitute the active principle of the areca nut, and is the body to which its property as a tænicide is attributable; its composition and properties closely resemble pelletierine, one of the alkaloids extracted from pomegranate-bark, and which, like it, is a volatile liquid. The bromo-hydrate and chloro-hydrate of this alkaloid have been employed in subcutaneous and intravenous injections and even by instillation into the eye. The subcutaneous injection of ⅓ to ½ grain will kill a rabbit in a few minutes, but the ⅙ of a grain is not fatal. The symptoms of poisoning with somewhat smaller doses closely resemble those of muscarine, an alkaloid extracted from the fungus agaricus. If the dose is not so large as to be immediately fatal it may be successfully combated by atropine. There are, however, certain differences between the action of arecaline and muscarine; areca in small doses diminishes the number of the heart-beats, and even is capable of arresting its pulsation in diastole. Its action may likewise be neutralized by atropine. Arecaline at the same time acts upon the respiration. Small doses increase the number of respiratory movements. Large doses arrest them, in fatal doses even before the heart is affected. Doses of ¾ of a grain in medium sized dogs, given subcutaneously, produce tetanic convulsions which are followed shortly by partial paralysis, the animal being affected with vomiting and liquid evacuations in which fragments of tænia are frequently found. Small doses especially increase the peristaltic action of the intestinesin cats and dogs. Further, in the physiological action of this alkaloid there is extreme contraction of the pupil, which is also produced by instillation in the eye. Arecaline may be found unchanged in the secretions and excretions, where it may be recognized by its reaction with the double biniodide of potassium and bismuth, and by the fact that those secretions containing this alkaloid possess the power of arresting the heart of a curarized frog.

It therefore appears that this is an extremely active substance, which deserves an important place in our materia medica on account of its action upon the muscles of the heart, its tænicidal and vermifugal properties, and for its peristaltic action upon the intestines.

The alkaloid, arecaine, in its physiological action upon animals and in its other properties closely resembles meythl nicotinic acid.

As we have previously stated, areca nuts have been recommended as a tænifuge in the form of powder in doses of 60 to 120 grains. It is claimed by Barclay that the tænia will be expelled three or four hours after the introduction of this remedy. Other authors recommend a dose of 225 to 375 grains taken in milk after having allowed the patient to fast for twelve hours, and then following up its administration by a purgative; castor oil, infusion of senna, or any of the common purgatives may be used an hour or so after the use of the areca nut; and since the latter is more active when the intestine is comparatively empty, it is evident that the diet for a day or two preceding should have been as restricted as possible. The areca nuts are such a common article in commerce that there is no doubt but that they can be readily obtained when any demand for them is created. It is advisable, however, that a certain amount of prudence should be used in giving the dose. The amounts given above may be entirely too much, especially if the statements as to the physiological action of arecaline are even partially correct, for Jahns has stated that one-tenth of one per cent. of the crude nut is formed by the alkaloid arecaline. The dose, therefore, should not exceed 60 to 90 grains. As yet no clinical studies have been made as to the value of this alkaloid arecaline. It would seem, however, correct to look for an equivalent of pelletierine in this substance.

A second tænifuge is the fruit of the cocos nucifera, a substance which for a long time has been employed as a vermifuge in all countries where this tree is cultivated; thus in Senegal Dr. Martiallis has employed it with good results, and numerous experiments have been made in France, which seem to prove that this substance has great activity as a tænicide, and confirm the statement already made in the *Gazette* for December 15, 1888, as to the common use of this substance in India. As to whether the cocoanut contains an active principle similar to arecaline or not is still unknown, and certain observers, who have experimented with the cocoanut as a tænicide, attribute the result simply to the indigestion which is produced when large amounts of the cocoanut are taken.

A. PAGE M.D., Rushmore, O., says: I have prescribed Aletris Cordial (Rio) in preference to all other similar preparations for a period of two years with no failure in a single instance. I also spoke of its merits in our last meeting of the Northwestern Ohio Medical Association, in a paper which I read before that body. I treated a case of a young lady of twenty-three who had been troubled with excessive menstruation for five years amounting almost to a hæmorrhage, at each period, and lasting ten days. Prescribed Aletris Cordial to be taken in drachm doses four times a day, commencing five days before each period; the first bottle reduced the discharge perceptibly and shortened the duration from ten to six days, ordered it to be taken during the interim of the next period and the result was almost magical, the second period being reduced to four days which was normal and the discharge the same. The patient has now been eight months without any treatment and she as also myself considers the case permanently cured.

IODIDE OF POTASSIUM IN DISEASES OF THE HEART.—In a lengthy article addressed to the Académie de Médecine, on this subject, Professor G. Sée arrives at the following conclusions:

The true medicament for the heart is the iodide of potassium. Far from being a depressent, as has been sustained, it is applicable, on the contrary, in valvular lesions or in myocardiacs with feeble pressure; it increases first the energy of the heart, and also the vascular pressure.

Then, again, in dilating the arterioles, it increases the blood to the part, and as a result the heart finds itself delivered from its resistance and recovers its contractile power. The iodide thus becomes a true heart tonic. And by the vaso-dilatation, which naturally extends to the coronary arteries, or feeders of the heart itself, the iodide, in doses of from two to three grammes, and not in the insignificant doses of half a gramme, renders a new service in promoting the movement of the blood, as well as the nutrition itself of the central organ of the circulation, notwithstanding what morbid condition may there exist.

NERVOUSNESS OF CHILDREN.

℞.

Celerina, - - - - - - -	3 oz.
Syr. Simp., - - - - - - -	4 oz.

M. Sig. Teaspoonful before supper and at bedtime.

THE APPROACHING REVISION OF THE PHARMACOPŒIA.—"*Eile mit weile.*" Progress in pharmacy is progress in medicine, and all physicians should be inspired by a desire to improve in every possible way the Pharmacopœia, which represents the accumulated experience of ages in the science and art of pharmacy, and constitutes the most reliable guide to pharmacists and physicians who would acquaint themselves thoroughly with medicinal principles and their effectual combination in eligible pharmaceutical preparations. The value of any addition to the Pharmacopœia suggested by pharmacists should, therefore, receive the earnest consideration of physicians, and the medical profession should be able to furnish from their clinical experience many important and vital suggestions to the Committee who are entrusted with the important duties of revision. This Committee, indeed, invites criticism from all well informed sources, and has widely distributed a Digest of Criticisms of the present Pharmacopœia for the purpose of the freest and fullest discussion by all concerned. It is in this spirit that the following criticisms are submitted.

As the generally accepted standard of strength and quality for for medicinal preparations, the United States Pharmacopœia should be most carefully compiled and removed as far as possible from all mercenary influences. One interest which is liable to influence the publication of the next Pharmacopœia disadvantageously, unless such influence is properly controlled and judiciously acted upon, is the manufacturing pharmaceutical interest.

Owing to its wide-spread circulation, its general acceptance as a standard, the Pharmacopœia must exert a very powerful influence both with physicians and druggists in the direction of inducing a larger consumption of pharmaceutical preparations. Thus, houses who own copyrighted, trade-marked or patented preparations would be willing to pay large sums to induce the Pharmacopœia to recognize the same. The adoption of a new standard of pharmaceutical preparations to substitute existing standards of the present day, could be used to great and profitable advantage by the manufacturers if they controlled by copyright, or trade-mark, or patent, the name of the line of pharmaceutical preparations, or the line itself.

There are many actual and much needed improvements required in this temple of pharmacy. Let the Committee address their attention to these. To what standards of excellence do our average manufacturers of medicine live up to at the present time? Are these standards the highest and best known to pharmaceutical science? Not at all; and we shall take occasion in further comments on this important subject to mention some improvements in pharmaceutical processses, the claims of which are eminently more worthy of consideration by the Committee of Revision. It will be readily seen that manufacturers of pharmaceutical preparations generally, could well afford to bring to bear great influence upon the projectors and controllers of the Pharmacopœia, if they had the slightest hope of inducing the Committee to act upon their suggestions.

It is, therefore, essential that the Committee in charge of the Pharmacopœia should be actuated solely by a regard for scientific and humanitarian interests. They should be men not only honest in purpose, but they should also be sufficiently competent by experience to judge as to the merits of each individual presentation. They should be free from all bias and prejudice. *Eile mit weile.* To make haste slowly should be their guiding rule.—*Medical Age.*

Treatment of Allopecia Areata.—Dr. Dubreuilh, in the *Journal de Med. de Bordeaux*, August 18, 1889, *Journal of Cutaneous and Genito-Urinary Diseases*, October, 1889, speaking of treatment in *pelade*, first calls attention to the prophylactic measure laid down by Besnier in his recent report to the Academy of Medicine, in which he strongly recommends that all subjects of the disease be excluded from schools and public institutions so far as practicable.

The curative treatment is uncertain it its results Some cases recover spontaneously in two months, while there are others that, despite the most vigorous treatment, last for months or over a year. The duration of a treated case is less than that of one left to itself. The methods of treatment are divided into two groups, according as the alopecia is of nervous or parasitic origin, and each method has been extolled to the exclusion of others, and for all the cases by the adherents of one or the other theory. Exciting frictions of all natures are recommended by the contagionists, as by those who only admit of a nervous origin.

Horand advises the application upon the bald spots of pieces of tinder soaked in croton oil left on long enough to produce vesication. If too much inflammatory reaction is brought about, the hair follicles may be destroyed and the baldness become permanent. Besnier says he has found no good results from any,form of electricity. Schütz on the other hand, has recently reported the greatest benefit in trophoneurotic alopecia by passing a current of four milliampéres through each spot for five minutes at a time. Besnier thinks epilation of the borders useful. Lassar believes in the contagious nature of the disease, and has had the head washed every day with soap, followed by

℞ Hydrarg. chl. corros., 1 part, by weight;
Glycerini,
Eau de cologne, āā 100 parts;
Aquæ destillat., 300 parts.

Then washed with a one-half per cent. alcholic solution of naphtol and finally rubbed with 2 parts of salicylic acid to 100 of neats-foot oil and 3 of tincture of benzoin. The author has found benefit to result from repeated fly blisters. As long as any trace of the affection remains, recurrence of the bald patches is to be expected.

AMONG other preparations now announced by Parke, Davis & Co., as being in strong demand are pichi (*Fabiana imbricata*), quinine muriate pills, D'Ary's cascara compound pellets, and hæmoglobin compound. According to the experience of physicians who have tested pichi chemically, it is especially efficacious in diseases of the urinary apparatus and of the liver. In cases of vesical catarrh, acute or chronic, dependent upon mechanical cause, such as gravel or calculus, or a uric acid diathesis, this remedy will quickly modify the urinary secretions, calm the irritability, and favor the expulsion of all gravel and calculi that can be passed through the urethra.

It favorably modifies also, chronic purulent mucous secretions. Its action on affections of the liver must be attributed to its diuretic properties. It is recommended for icterus, hydropsy, and dyspepsia due to insufficient biliary secretions. In this case the essential oil, when absorbed and carried into circulation, acts like a stimulant of the secretory apparatus in general; but the specific action of pichi is directed without doubt upon the organs of the urinary apparatus. It is used in the shape of a fluid extract, in doses of from 4 to 6 teaspoonful per day in cold water or warm.

Muriate of quinine pills are regarded now as one of the most eligible forms of administering quinine. These pills are highly soluble and secure rapid absorption and the speedy therapeutic results of this drug.

D'Ary's cascara compound pellets were originally suggested by Dr. Ralph D'Ary in 1885 and since then have been widely used in constipation and with the result of radical cure of this wide spread affection in most cases. The forumla is as follows:

Extract cascara sagrada,	4-15 grain
Extract nux vomica,	1-30 grain
Extract belladonna,	1-60 grain
Euonymin,	1-5 grain
Xanthoxyllin,	4-15 grain
Oleoresin capsicum,	1-20 grain.

In an article published in *Medical World* February, 1890, by F. E. Steward, M.D., Ph. G., this author calls attention to the value of hæmoglobin compound* or bullock's blood in therapeutics. He reports the experience of many physicians who have employed successfully its stimulant nutrient properties in cases in which all other forms of nutrients are rejected. It is evident from the experience had with this preparation that it has been of the greatest service in acute diseases in securing assimilation, and restoring vitality when the stomach is irritable or its functions more or less inoperative.

DYSMENORRHŒA.

℞ Ext. Cannabis Ind. fl., - - - - -	½ oz.
Aletris Cordial (Rio), - - - - -	7½ oz.

COCILLANA.

Guarea.—Species indetermined,
Synonym.—Sycocarpus Rusbyi, Britton.
Part Employed.—The bark.
Natural Order.—Anacardiaceae.
Habitat.—Bolivia.

Properties.—Expectorant, Tonic, Laxative.

This new remedy possesses a sphere of influence on the respiratory organs somewhat similar to ipecac but said to be "superior in certain diseases of the air passages in which the latter is often used." (Dr. D. D. Stewart, in *Medical News*, August 24, 1889.)

Besides its excellence as an expectorant, clinical experience has also established the fact that it exerts a tonic influence upon the appetite, and that it reduces the night sweats of chronic bronchitis and phthisis. Cocillana also gives promise of usefulness as a laxative.

Dose.—10 to 30 minims (0.6 to 2 c. c.).

Among other products this house has recently introduced may be mentioned the following: Compound Sulphur Lozenges; Acetanilid Tablets; soluble Elastic Capsules of Quinine Muriate.

They are headquarters also for selected pressed herbs which they guarantee to be superior to any others in the market.

ORIGINAL CORRESPONDENCE.

ON THE ADMINSTRATION OF QUININE TO CHILDREN.

417 Adams Avenue, Scranton, Pa.
February 11, 1890.

Editor GAILLARD'S MEDICAL JOURNAL:

Sir:—If one may judge from the discussion of Dr. Vinegard's paper, on the treatment of malaria in children, as reported in your magazine for February, the administration of quinine to children, especially those who are not old enough to swallow pills, is a problem not only of grave importance, but one that has not yet been solved satisfactorily. I think Dr. Caillé voiced the sentiment of a great number of the profession, when, during the course of the discussion he said: "* * * it is impossible to hide the taste of quinine, when given in solution." I can truthfully say, that such has been my experience, except when using the preparation about to be mentioned. I have combined the alkaloid, with yerba santa, licorice, cascara sagrada, tannic acid, and various other drugs, but the only prescription that I ever found the little patients' stomachs could bear at all, was one containing a scruple of the bi-sulphate, either of quinia or of cinchonidia, a substitute I grew in the habit of using when quinia was very costly, and which I have always found efficacious in the same doses, to two ounces of simple syrup. A few times have I written such a formula, and found my child-patients taking it without crying or vomiting when I next visited them. Some three or four years ago I saw in the advertising columns of the *American Journal of Obstetrics* an offer of the Paris (Ky.) Chemical Company to supply physicians with a sample of their "syrup of tasteless quinine" on application. In answer to this advertisement a sample reached me. The medicine resembled an imperfect emulsion, was colorless, and there was something of a sediment at the bottom of the bottle. The taste was indifferent, especially if the directions to swallow water immediately after taking it were followed. It was said to contain two grains of quinine sulphate to the teaspoonful. I gave this preparation a first trial, and was so well pleased, that I never use anything else for children, to whom I wish to give quinia. Some months ago what purported to be an analysis of this syrup, appeared in several medical journals, and it was said to contain no quinia, but instead some other cinchona salts of less anti-malarial power. It is not for me to say how far this may be right, but I do know that time and again have I prescribed syrup tasteless quinia, by which my druggists understood this mixture, in teaspoonful doses, a swallow of water to be taken immediately afterwards, with the best results in every way. My cases yielded, and the little patients were neither sickened or nauseated by this medicine. In a few adults, when difficulty was experienced in swallowing pills or capsules, I have used it with no results but good ones. It is possibly a patented preparation. If it is, so is antipyrine and where is the physician who dare assert that he is acquainted with the exact composition of the infant foods, the mineral waters, the ready made pills, the antiseptics and antithermics, which come in use daily in his practice! The preparation I have alluded to, is one worthy of confidence, and when one does not wish to use maximum doses of quinia is all that can be wished for. In closing, I may say, that, for several years I used quinia by inunction. One drachm of the drug to an ounce of lanolin, vaseline or simple cerate. Intermittents of other manifestations of the malarial poison have yielded, but the dose cannot be gauged, and in many cases an erythema has ensued, which prevented its further use. Suppositories I have also used. This method commends itself. The main objection I have found, is the almost uncontrollable desire to defecate, which follows their introduction. In young children, it is almost impossible to prevent their passing them, unless introduced while sleeping. On the whole, so far as my experience goes, the syrup I have mentioned, is as much superior to any mixture of quinia I ever used, as the method by which it is administered, is to either rectal or dermal medication. It may not be out of place for me to state, that I stumbled across this preparation accidentally, and have no interest, beyond that which I consider all physicians have in an elegant pharmaceutical product, directly or indirectly in its manufacture.

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*As made by Parke, Davis & Co.

STANLEY M. WARD.

REVIEWS.

A TREATISE ON MATERIA MEDICA, PHARMACOLOGY AND THERAPEUTICS. By John V. Shoemaker, A.M., M.D., Professor of Materia Medica, etc., in the Medico-Chirurgical College of Philadelphia, etc., and John Aulde, M.D., Demonstrator of Clinical Medicine, and of Physical Diagnosis in the Medico-Chirurgical College of Philadelphia, etc. In two volumes. Vol. I., Devoted to Pharmacy, General Pharmacology and Therapeutics, and Remedial Agents not Properly Classed with Drugs. Philadelphia and London: F. A. Davis, Publisher. 1889.

The authors wish to be classed with those " who study what they see, reflect upon what has been recorded, and deduce from the knowledge thus acquired the inferences warranted by the facts." A praiseworthy, if not a wish probable of fulfilment; a conceit, not a little surprising, if offered as a fact! They would stand alone and be overwhelmed by the enormity of their loneliness, if such were the case. However, we have before us a first volume of a treatise on Materia Medica and Therapeutics, a field in which there is little room for the display of great originality and less for the possibility of a complete revolution. We wonder first, therefore, why, unless an author really has something out of the ordinary in his method of treatment, or in his matter, or in some way or other, he takes up his energies and time in an almost thankless and generally unremunerative task.

If we were going to build a house we would first consult a plan; if we contemplate purchasing a book we naturally desire to know its method of classification. The classification in the present work, with, of course modification, is largely that of Garrod. There are three general classes: medicines for internal administration, those for external administration, and a third class embracing antidotes, disinfectants and antiseptics, afterwards designated as chemical agents. Granting the fact that there has never yet been, if there can be, a good classification of drugs, the classes here offered run into each other, that is there is cross-division at every turn. How many "internal remedies" are also "external remedies" and vice versa? How many chemical agents, confine them if you choose to "antidotes, disinfectants and antiseptics," are both internal and external remedies? In other words where is there any scientific or logical basis of division?

Now take the species of the first general class, we have "medicines affecting nutrition" and "medicines acting through the nervous system." How many medicines are there that act on or through the nervous system that do not affect nutrition? And so we might go on with the other subdivisions; and the outcome of it is this: the classification is not an improvement on many that have been proposed and is not the most desirable one by any means.

There is, however, a great deal of general information in the book and it is for this, if for anything, that it will receive a good patronage. The custom of printing in darker colors important words and facts in the course of the text adds some ease to the rapid reading of the text even if it does not add to the general appearance of the page.

There are a number of blank pages inserted here and there in prophetic anticipation, perhaps, of the need of the same.

We shall await the completion of the work with some interest and we would suggest that it is not an especially desirable plan to "trust to the reader to discover its excellences."

CLINICAL LECTURES ON SOME OBSCURE DISEASES OF THE ABDOMEN.—Delivered at the London Hospital by Samuel Fenwick, M.D., Fellow of the Royal College of Physicians; Physician to the London Hospital. London: J. & A. Churchhill, 11 New Burlington St.

In a series of nine lectures, delivered at the London Hospital, the author has selected for his subjects some obscure diseases of the abdomen upon which light and information are very much needed. We will give the table of contents as it appears in his book.

Lecture I.—On Perforation of the Appendix Vermiformis Cæci.
Lecture II.—Stricture of the Ileo-cæcal Valve.
Lecture III.—Fæcal Abscess.
Lecture IV.—On Fæcal Abscesses connected with the Small Intestines.
Lecture V.—On Perinephritic Abscess.
Lecture VI.—On Gastric and Perigastric Abscesses.
Lecture VII.—Tubercular Peritonitis in the Adult.
Lecture VIII.—Cancer of the Peritoneum.
Lecture IX.—Hydatids of the Peritoneum.

In the whole range of diseases by which man is afflicted, it would be difficult to bring together the same number whose diagnoses present such difficulty, and in which treatment yields such meagre results. The work is almost entirely the result of the author's personal observations. By watching his patients carefully during life and by following most of them, in a comparatively short time, to the autopsy table, he has been able to collect much valuable information which ought to give us, at least, a slight insight into the diagnosis and treatment of this class of diseases. The author has given the lectures in a clear and comprehensive style. The numerous records of the different cases and autopsies would be a valuable addition to any man's knowledge, and in publishing these lectures the author has furnished a contribution to the study of these diseases which ought to be appreciated.

A MANUAL OF MINOR SURGERY AND BANDAGING.—For the use of House Surgeons, Dressers and Junior Practitioners. By Christopher Heath, F. R. C. S., Surgeon to University College Hospital and Holme Professor of Clinical Surgery in University College, London; Member of the Council and Court of Examiners of the Royal College of Surgeons of England. Ninth edition. Philadelphia: P. Blakiston, Son & Co., 1012 Walnut St.

The fact that this is the ninth edition of this little volume is proof enough that it is a work of merit and has been well received. Although addressed to House Surgeons, that is only part of its mission. A careful perusal of its pages will amply repay the general practitioner, and particularly that one who has not been long in practice and who has not been so fortunate as to enjoy the privileges of a course in one of our hospitals, for in it will be found many valuable suggestions as to the treatment of just that kind of surgery which a general practitioner meets in his daily life.

MANUAL OF SKIN DISEASES. With special reference to diagnosis and treatment. For the use of students and general practitioners. By W. A. Hardaway, M.D., Professor of Skin Diseases in the Missouri Medical College, etc. St Louis: Theo. F. Lange. 1890. Price $3.00.

To the making of books there is no end, and of no line of books is this as eminently true as of those relating to skin diseases, especially manuals. There are some good things in each one; some things not given in the other manuals; but very few things that warrant the continual putting out of these books. The present manual has the advantage in one thing: it has followed several excellent works quite lately published and drawn on them for considerable information. It is better than some; not so good as others; but on the whole a fair presentation of the subject (for its compass), and will receive a good patronage.

THE RHEUMATIC DISEASES (so called). With original suggestions for more clearly defining them. By Hugh Lane, L.R.C.P., Edinburgh, etc., and Chas. T. Griffiths, L.R.C.P., London, etc. "*Non est vivere, sed valere vita.*" London: J. & A. Churchill, 11 New Burlington St. 1890.

A Handbook of Obstetrical Nursing for Nurses, Students and Mothers.—Comprising the course of instruction in Obstetrical Nursing given to the pupils of the Training School for Nurses connected with the Woman's Hospital of Philadelphia. By Anna M. Fullerton, M. D., Demonstrator of Obstetrics in the Woman's Medical College of Pennsylvania: Physician-in-charge and Obstetrician and Gynæcologist to the Woman's Hospital of Philadelphia, and Superintendent of the Nurse Training School of the Woman's Hospital of Philadelphia. Philadelphia: P. Blakiston, Son & Co., 1012 Walnut St. 1890

Monthly Nursing. By A. Worcester A.M. M.D., Fellow of the Massachusetts Medical Society, etc. Second edition. New York: D. Appleton & Company. 1890.

At least to us, the title was entirely misleading; but the fact that the book has gone into a second edition shows that it is appreciated. The breast binder offered does not compare in efficiency or in beauty to the one used in the New York Maternity Hospital and described in several of his writings by Dr. H. J. Garrigues.

Text Book of Medical Chemistry for Medical and Pharmaceutical Students and Practitioners. By Elias H. Bartley, B. S. M.D., Professor of Chemistry and Toxicology, Long Island College Hospital, etc. Second edition. Revised and enlarged with sixty-two illustrations. Philadelphia: P. Blakiston, Son & Co., 1012 Walnut St. 1890.

MISCELLANEOUS.

Fatal Result of Suspension for Ataxy.—A case of locomotor ataxy, in which suspension was followed by death, was not long ago reported by Dr. C. Borsari, of Modena.* The patient, a man, æt. 45 years, was in the second stage of the disease, which was complicated by aortic incompetence. After the first suspension, which lasted fifteen minutes, and was carried out "with every precaution and with the help of a well-constructed apparatus," the patient had momentary anæsthesia in the feet; his face became pale, his eyes glassy, and he complained of giddiness and faintness. These symptoms passed off after a while, and the man was able to walk back to his ward. He was afterwards suspended for short periods on alternate days, though the operation was always followed by increase of staggering in the gait, by convulsive movements of the arms and legs, and by pallor and an expression of distress in the countenance. After three or four sittings, however, there was a notable improvement in motor co-ordination. Later on, violent vomiting (an entirely new feature in the case), set in, together with a certain amount of pyrexia, which lasted for forty-eight hours. When the temperature fell to normal he was suspended for the eighth time, the operation lasting forty seconds and being followed by no untoward effect. Soon afterwards, however, the vomiting became worse, and the man complained of intense pain in the epigastrium. This was speedily followed by delirium with convulsions, ending in coma and death three days after the last suspension. The necropsy confirmed the presence of the aortic disease and the characteristic lesions in the spinal cord; in addition to these there were also found signs of acute exudative lepto-meningitis, both cerebral and spinal, the latter being in the dorso-cervical region. There was no indication that the affection of the heart had been in any way aggravated by the suspension; and Dr. Borsari leaves it to be settled by further experience whether the acute inflammatory process was set up by the strain to which the membranes of the spinal nerve roots were subjected during suspension. He points out that, although suspension has been performed thousands of times, no similar accident has yet been recorded.

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*Revista Generale Italiana de Clinica Medicale.

THE TREATMENT OF ENURESIS NOCTURNA.—Baruch (*Arch. of Pediat.*, April, 1889), comments on the prevalence of nocturnal incontinence of urine in children, and the great difficulty universally found in controlling it. In the New York Juvenile Asylum, which cares for nearly one thousand children, the percentage of cases is about ten. Though the children thus affected have been kept in special wards, and roused once or twice in the night, and though all plans of treatment have been tried, no improvement appeared to be affected. Punishment the author believes to be cruel and unjust, and circumcision he deems useless in most cases, for the reasons which he explains; chief among them being that the girls of the institution suffered quite as frequently as the boys. The failure of medicinal and surgical treatment of the disease the author is disposed to assign to three causes: 1st. A difficulty of applying the remedies recommended to the theoretical indications laid down by writers. 2d. The impossibility of applying these remedies to the parts supposed to be involved. 3d. The absence of evidence that the system, or the part affected, has really been brought under the influence of the remedies administered.

To the first cause of failure he has ceased to give further thought, as the theories proposed differ so widely. The third, and the second cause also, so far as internal remedies are concerned, he has succeeded in overcoming during the last twelve months by attending carefully to the necessity of bringing the the system completely under the influence of the medicine given. He introduces no new drug, but employs the well-recommended belladonna, or rather its alkaloid, atropina. To obtain success it is necessary to produce the physiological effects of the drug. It is not required to administer the atropina during the day, but sufficient should be given at four o'clock in the afternoon and again at seven o'clock, if needed, to insure dilatation of the pupil. One sixty-fourth of a grain for children from six to ten, and double the quantity for children up to fourteen, will usually suffice. If the afternoon dose has widely dilated the pupil by the evening, the second dose can be omitted. He has so far treated sixty boys in the Asylum in this way, and with surprising results. Although these boys had been in the wet-bed ward for from three months to three years, twenty-nine of them ceased wetting the bed after the first dose of atropine, and most of the others are rapidly improving.—*American Journal of the Medical Sciences.*

VOLVULUS AND ITS TREATMENT.—The following conclusions are arrived at by Dr. N. Senn at the close of an interesting paper upon the Surgical Treatment of Volvulus (*Medical News*, Nov. 30), in the course of which he deprecates the resort to any such attempts at taxis as those advised by Mr. Hutchinson, and recently published in his "Archives of Surgery." Dr. Senn gives a successful case of volvulus of the sigmoid treated by laparotomy: "1. The predisposing causes of volvulus are either congenital or acquired, and consist in elongation of certain segments of the intestine, abnormal length of mesentery, and adhesions. 2. Irregular distribution of intestinal contents and violent peristalsis are the most important exciting causes. 3. Volvulus is most frequently met at the sigmoid flexure and the lower portion of the ileum. 4. Secondary volvulus on the proximal side of other forms of intestinal obstruction is not a rare occurrence; it is also frequently developed during an attack of peritonitis. 5. As a rule, the symptoms are more acute and intense if the volvulus is located above the ileo-cæcal region. 6. Vomiting in cases of volvulus of the sigmoid flexure is not a constant symptom. 7. The most important physical sign of volvulus is a circumscribed area of tympanites which corresponds to the location of the volvulus, but this sign is only of value before general tympanites has set in, and therefore enables the surgeon in many cases to make an early and positive diagnosis. 8. All cases of volvulus should be treated by laparotomy if reposition cannot be accomplished by rectal insufflation of hydrogen gas. 9. Reposition should not be attempted without evisceration. 10. Evacuation of intestinal contents by a free incision should be practised in every case where general distension of the intestines is present. 11. Enterectomy becomes necessary if any considerable portion of the intestinal wall has become gangrenous. 12. Irreducible volvulus should be treated by establishing intestinal anastomosis with permanent exclusion of the seat of obstruction from the active fæcal circulation. 13. Recurrence of volvulus can and should be guarded against by shortening the mesentery by folding it upon itself parallel to the long axis of the bowel and suturing the apex of the fold to the root of the mesentery."—*Lancet.*

DIAGNOSTIC VALUE OF PEPTONE IN THE URINE.—Brieger (*Inaugural Dissertation*, Breslau, 1888) as the result of a series of investigations found that the most common cause of the occurrence of peptone in the urine was the presence, somewhere in the body, of a focus of inflammation giving rise to the formation of pus—pyogenic peptonuria.

In croupous pneumonia peptonuria was of invariable occurrence, showing itself usually shortly before the critical fall of temperature. In pleurisy the occurrence of peptone points to the formation of an empyema. Whereas the absence of peptonuria with an established empyema indicates that there is some hindrance to resorption. Peptonuria complicating peritonitis points infallibly to the formation of some large, purulent deposit.

In meningitis, as already observed by von Jaksch, peptone is so invariably present where the meningitis is purulent, that its occurrence suffices to establish a differential diagnosis between this form and the tubercular.

In rheumatism the increase or diminution of the amount of peptone in the urine affords an index regarding the course of the resorption of the articular exudation.

Finally, Brieger calls attention to the fact that the recent discovery of Neumeister indicates that under certain circumstances peptone may be formed in the kidneys from the albumose of the blood. This he calls the nephrogenous form of peptonuria.—*The American Journal of the Medical Sciences.*

THE TREATMENT OF INFLUENZA.—M. H. Huchard, writing in the *Revue Gén. de Clin. et de Thérap.* (December 12th), speaks of nervous prostration as being a chief clinical characteristic of severe cases of influenza, requiring for its treatment quinine, alcohol, and, in bad cases, even injections of caffein and ether. Quinine, he says, is indicated on account of the markedly remittent type of fever, and to moderate the evening exacerbation it suffices to give a full dose (5 to 15 grains) of the sulphate or hydrobromate in the morning. Smaller doses more frequently taken are useful for their tonic rather than antipyretic effect. In the neuralgic or rheumatoid form of influenza antipyrin (15 grains) combined with bicarbonate of soda (7½ grains), is recommended by M. Huchard, to be taken every four hours, or instead of antipyrin, phenacetin or salol (7 grains). Influenza often assumes a broncho-pulmonary form, and in certain cases is very grave. In the epidemic of "la grippe" in 1886, recorded by M. Menetrier, the pneumonic forms were very asthenic. In such cases, tonics, milk, alcohol, and, in fact, general restorative measures are indicated rather than local applications to the chest. If the dyspnœa became severe, and the condition termed by Graves "pulmonary paralysis" ensues, then strychnia is of value; or in case of impending asphyxia or renal asthma, venesection; but when the asthenia itself threatens life, there should be no hesitation at resorting to hypodermic injections of ether, and especially of caffein. For the gastro intestinal form, mild aperients, ipecacuanha, and the use of salicylates of bismuth or of magnesia, naphthol, or iodoform to promote intestinal antisepsis, are indicated.—*Lancet.*

NOTES ON LABOR (A. Lapthorn Smith, M.D., in *Can. Med. Record.*)—In reading reports of difficult cases of midwifery, especially by young practitioners, we notice very often that he ruptured the membranes. Now, if there is one thing more than another that the young practitioner should look upon as the best friend that he and the patient possesses, it is the bag of waters. It is Nature's exquisitely perfect instrument for carrying on dilatation of the os uteri, and not only of the os uteri, but also of the external parts. This latter use of the bag of waters seems to be unrecognized, even by the older practitioners. I confess that it is only during the past few years that I have recognized how important a factor it may be in saving the perineum of the primipara. During my first few years, I ruptured the anmiotic membrane before dilatation was complete, in the mistaken hope of saving my time and the patient's suffering, the result being a considerable crop of lacerated cervices, and, at the same time, a delay of several hours in attaining the very object for which I was striving. With experience I began to leave the membranes alone until I was certain that the os was fully dilated. After a few years I began to think that, if it was good for dilating the os, it might be equally useful for dilating the vulva. I now consider myself fortunate, in attending a case of midwifery, if I find the bag of waters intact, and I jealously preserve it until the head has began to pass under the pubic arch. The fact that the early rupture of the amniotic membrane is a disadvantage is known even to the laity, for many an old woman has gravely shaken her head when she informed me that it was "going to be a dry labor." It is true that, in many cases, especially among women in the highest state of civilization, the membranes seem to have degenerated so that they are now no longer able to stand the *vis a tergo* pressure of the uterine contractions, so that, among the upper classes, dry labors are more common than among the poor and hard-working.

Another accident which seems to be unduly common, to judge from the reports above mentioned, is the retention of the placenta. This is an accident which has only occurred to me once or twice in over three hundred cases, and, I may add, these cases occurred at the beginning of my practice, when I had more faith in tractions on the cord and less in Nature's own method of expelling that organ. Retention of the placenta, post-partum hæmorrhage and hour-glass contractions, I believe to be largely due to the tearing off of the placenta at its center before the uterus has had time to sheer it off, which is Nature's way. The irritation this causes sets up contractions in the middle segment instead of in the fundal or placental segment, which it would, I believe, always do if left to Nature, or, at the most, if Crede's method were employed. Now, I am particularly anxious to keep the placenta on the placental site until I am sure of there being sufficient uterine contraction present to guarantee the closure of the uterine sinuses, and when those contractions do take place, I will most surely find the placenta in the vagina. Even after a miscarriage, provided I can control the hæmorrhage, I would rather give the uterus time to squeeze the placenta out itself, guaranteeing the patient against septicæmia, by frequent antiseptic irrigations with the Fritz-Bozeman return flow cavity.

I frequently make use of the sympathetic influences of the breasts over the womb, in order to obtain strong contractions of the latter organ, when I find myself in the presence of threatened hæmorrhage without any ergot at hand. By placing the child to the breast, even before it is washed, I obtain *instanter* such powerful contractions as to remove all danger of hæmorrhage and to expel the placenta. I cannot understand the reason of some of our older practitioners who direct that the child is not to be put to the breast for one, two, or three days. It seems to me that, by so doing, they are flying in the face of Providence.

Apart from the safety which it secures to the woman against post-partum hæmorrhage, there is the great advantage to the child of giving it these small doses of colostrum, that beautiful laxative provided by Nature, which no chemist can imitate and which the child so greatly needs to clear out the meconium from its bowels. Latterly, I notice in some of the journals a recommendation not to wash the child at all for twenty-four hours, which, to me, seems a good one. To expose an infant to the temperature of the air for half an hour, more or less, on a Winter day, while it is being washed, is running a great risk of pneumonia or bronchitis, which we need not be surprised to see supervene when we consider that it has been bathed in a liquid of a temperature of a hundred degress for the nine months previous.

MEDICAL NEWS AND NOTES.

THE correspondent of the London *Lancet*, from Vienna, says that careful examinations of the nasal secretions of the sputa and of the blood have been made here during the epidemic by various bacteriologists, and he is informed that Dr. Max Jolles has found in the sputa of influenza cases a new micrococcus quite resembling Friedländer's pneumonococcus, and has been able to prepare cultures of this micro-organism. The cultures show also the nail-like shaped appearance of Friedländer's coccus, but the single crops are surrounded by a slightly annular depression, and show greater lustre. The inoculation experiments made with these cultures on animals are not yet finished. The micrococcus has not been found in the blood of the patients. Professor Weichselbaum has also discovered in the nasal mucus of influenza patients a micrococcus similar to the pneumono-coccus, and will deliver a lecture on his bacteriological researches on influenza at the next meeting of the Vienna Society of Physicians. With regard to the common micrococci and similar micro-organisms found in the sputum, it may be stated that they have also been found in water taken from the Vienna Waterworks and examined during the last week of December. As many as 325 were counted in one cubic centimetre of the water.

A VERY sad and rare consequence of influenza is reported from Posen—namely, dangerous thrombosis in the left leg. The patient is Surgeon-General Henrici. Professor Bardeleben of Berlin has been consulted, and the limb has been amputated above the knee.

AT a recent meeting of the Paris Academy of Medicine, Dr. Péan presented a woman, thirty-two years of age, on whom he had practised ablation of all the bones of the face for osteo-fibromata, following on dental heterotopia. The result was most remarkable, and this woman, deprived of the osseous frame of the face, performs all the facial movements, eats, and speaks, by means of apparatus which were manufactured for her by two professors of prosthesis at the Dental School of Paris.

NERVE-STRETCHING IN LEPROSY.—Dr. Beaven Rake has, in his Government report, studied the effect of nerve-stretching in leprosy. He performed a hundred operations, and came to the conclusion that the best nerve to stretch was the sciatic, for it is nearest the spinal ganglia, and commands the supply of the whole leg, and foot, and back of the thigh. The operation only seemed to be of value for the pain associated with ulceration, but often in these cases the relief was very marked.—*Lancet.*

TO CLEAR WASTE PIPES.—A retired plumber thus gives a point for the gratuitous relief of householders: "Just before retiring at night, pour into the clogged pipe enough liquid soda lye to fill the 'trap' or bent part of the pipe. Be sure that no water runs in it until the next morning. During the night the lye will convert all the offal into soft soap, and the first current of water in the morning will wash it away and clear the pipe clean as new."

A LEPER from St. Louis went to Boston and has been detained there in quarantine.

THE Royal College of Physicians, of England, has determined that the course of study shall, in the future, extend over five years, instead of four, as heretofore.

DR. HUNTER MCGUIRE will be amused to see himself placed on record in one of the Western medical journals as having been the "Medical Director of the Confederacy," and also the medical attendant of Mr. Jefferson Davis. The latter position was filled by the late Dr. A. Y.

P. Garnett, of Washington, who accompanied Mr. Davis to Richmond, and the first position never having existed was, naturally, not filled by any one. Dr. McGuire having been the friend and medical attendant of Stonewall Jackson, and the Medical Director of his corps, was certainly the recipient of very great honors which, with his subsequent fine career, have justly distinguished our talented collaborator.

THE next meeting of the Fifth District Branch of the N. Y. State Medical Association will be the Sixth Annual Meeting to be held in Brooklyn on Tuesday, May 27, 1890.

All Fellows desiring to read papers will please notify the Secretary,

E. H. SQUIBB, M.D.
P. O. Box 94, Brooklyn.

CHARLES CHAILLE DE LONG writes in the last *Cosmopolitan*, that the country of the Abadiehs (Egypt) is that halcyon spot where neither Opthalmia nor Phthisis nor mothers-in-law, and not even the Pest of lower Egypt are to be found. He suggests the spot as one altogether suitable for the model sanitarium.

THE Maltine Company are presenting the profession with cabinet sized portraits of celebrated medical men. We have the pleasure today of being face to face with Sir Wm. Jenner, Sir Andrew Clarke, and Schrader of Berlin, who for the time being appears in amiable association with Sir Morrell Mackenzie.

"THE LONGEVITY OF THE JEWS," says Dr. Hasmes, "has long been demonstrated by statistics. In Prussia, the cradle of Judaism, there are three still-born Christians to one Jew; the Christian mortality is 23 per cent., Jewish, 15 per cent.; from one to five years, 36 per cent. of Christians die against 25 per cent. of Jews; and at Furth the average duration of life is twenty-six years among the Christians and thirty-seven among the Jews.

ECTOPOTOMY is the term which has been introduced by Stratz to include all laparotomies undertaken for the relief of ectopic pregnancy.

MARION HARLAND, has taken up the work of restoring the ruined monument marking the burial-place of MARY THE MOTHER OF WASHINGTON.

One hundred years ago this venerable woman was interred in private grounds near Fredericksburg, Virginia. In 1833, the cornerstone of an imposing memorial was laid by President Andrew Jackson. A patriotic citizen of New York assumed the pious task, single-handed, but meeting with financial disaster, was compelled to abandon it.

Marion Harland says truly—"the sun shines upon no sadder ruin in the length and breadth of our land, than this unfinished structure."

The publishers of *The Home-Maker*, of which Marion Harland is the editor, offer, as their contribution to the good cause, seventy-five cents out of every annual subscription of two dollars to the Magazine sent in during the next six months. Every such subscription must be accompanied by the words, "*For Mary Washington Monument.*"

The offer is generous and should meet with an enthusiastic response.

SUBCUTANEOUS INJECTION OF SALINES FOR POST-PARTUM HÆMORRHAGE. Pregaldino (*Bullet. de l'Acad. de Méd. de Belgique*, 1888, No. 9) has injected 6 per cent. salt solution into the subcutaneous abdominal tissue of dogs which had lost two-thirds of their blood; recovery followed. He also treated hæmorrhage after abortion in the human subject in the same manner, using two pints of fluid; speedy recovery ensued.

Münchmeyer (*Archiv. für Gynäkologie*, Band 34, Heft 3) reports eight cases of severe post-partum hæmorrhage successfully treated by this method. His solution was 6.1 per cent. of sodium chloride, of which one quart was placed in a bottle, a cotton plug inserted, and the fluid sterilized.

For injection, a funnel, rubber tube thirty-nine inches long, and a long fine needle are needed, which are first carefully antisepticized. The injection is made deeply into the subcutaneous tissue, between the scapulæ, or in the supra-clavicular spaces; a quart may be used. The solution should be 98° F.; the fluid is rapidly absorbed if massage is made over the point of injection. Iodoform collodion is painted over the puncture; inflammation was not observed.

IN MEMORIAM.

DR. ISAAC E. TAYLOR.—A MEMOIR.

BY DR. JOHN SHRADY.

"What a fine thing old age is!" said M. Augier, not long before his death, "surrounded with care, attention and respect. But what a pity that it lasts so short a time!"

Many years before this the distinguished playwright Dr. Samuel Johnson wrote, in almost the same strain:

"An age that melts in unperceived decay,
And glides in modest innocence away;
Whose nights congratulating conscience cheers;
The general favorite, as the general friend;
Such Age there is, and who would wish its end!"

"Perhaps," said the Greek sage to the sorrowing relatives of a youth cut down in his prime, "he may have risen from the feast before he was yet drunk."

"Not so happy, yet much happier," was the consolation offered by the witch to Banquo, anxious concerning the succession. Macbeth reached the throne through crime and turmoil, Banquo became not a king, but did beget them! Between these extremes of youthful hope and aged experience how many lives have their span!

The young lieutenant who touches his cap and meets his doom, may have missed the glory of the war, but, perchance, darker clouds might have received the phantasm of a more ignoble future, if, in the gallery of heroes he were destined to win only a vacant tablet or a portrait turned to the wall. Then, too, there may be lives which, like a flimsy plot, are delayed by a tedious dialogue, full of platitudes and pretense, while still other lives may glide in an even stream, carrying argosies safely to the end—remembered more than blest and yet withal grandly, nobly useful. Such as this last was the career of Isaac E. Taylor, around whom so many gracious memories cluster, for, was he not our "guide, philosopher and friend?" His was indeed a self-poised, unshowy life of contented service to his kind—unmarked by that awe of distance yielded to Moses weighted with the tables of the law, but nearer to us in its sympathies, its struggles and, last of all in its modest triumphs. His was an every-day character to be found among the staunch common people of all races and diversities of opinion. Indeed, may it not be said of him that he was as conscientious as gentle, as safe in counsel as tolerant in doctrine and as erect in morals as in mien. Could not those who knew him best say here was a life of not over-greatness blotched with many failures and bankrupt by many forfeits, but superbly symmetrical, doing with its might the handiest work without slight or murmur; a life which was more of a sonnet than an epic—aye, a life, the name of which, to the surprise of men, the Angel writes in his "Book of Gold."

Dr. Isaac E. Taylor was a native of Philadelphia. His parents, with the sturdy names of William and Mary, good homely folk of English stock, came from Cambridge, to settle in Philadelphia, in 1797, and here he was born in a house once occupied by Washington, the date as given, April 25,1812. A boarding-school, as was the custom, followed in course, and then Rutger's College, with his name at last entered upon the catalogue as of the Class of 1830. This sums up the history of his youth, barring a little episode which might have spoiled his future—a suspension for playing billiards, but that was in the long ago, when lines in minor morals were strictly drawn.

During his suspension at home he circumvented his leisure by attending lectures on anatomy, chemistry, and midwifery; it being the last course delivered by Drs. Physick and James, the latter a Professor of Obstetrics. Of this part of his experience he was wont to speak with affection and enthusiasm. Naturally enough, he thought that there were never such teachers as these. At last, a Bachelor of Arts, he wavered between law and medicine, but soon decided to enter the office of his brother, Dr. Othniel H. Taylor, originally of Camden, but at this time a flourishing practitioner in Philadelphia. In this latter city, during the appalling epidemic of 1832, he served as an assistant in one of the ten cholera hospitals, and two years afterwards was graduated a Doctor of Medicine from the University of Pennsylvania. His thesis was on Hæmoptysis.

Immediately after his marriage, in 1835, with Miss Eliza Mary, daughter of Stuart Mollen, a merchant of New York, by the latter of whom, he was induced to venture in business much against his tastes; but he returned to medicine in 1839, during which year he decided upon this city as his future home. In 1840 he visited Paris, and entered the office of Cazeau, for he saw in the specialty which that historical name suggests, a wide field of benefit to his race. During his European sojourn he travelled extensively and observed critically, without neglecting the hospital advantages of Paris and Dublin, while at the same time contriving at odd intervals to visit many centres of interest. Those who knew him intimately were not slow to admit that a conscientious sense of duty guided his every effort of improvement. In 1841, on his return from Europe, he re-associated himself for good with the City, Eastern, Northern and Demilt Dispensaries, as attending physician, having charge, in each, of the diseases of females. While serving in the City Dispensary, he had private classes of four in each, and this was the first time that clinical instruction was given on diseases of females, in the United States. After this his name was always prominent in public benefactions. If anything, his efforts were now redoubled and his industry re-invigorated.

Ever in contact with the public, Dr. Taylor had seen many types of men, both within and without the profession, he had mingled with them and impressed them with his own individuality and, above all, he retained that rare candor of charging his failures to his own account. And yet in his successes he scorned to combine the herald with the hero, he relegated all dogmatism to the less informed, counting as naught the exaggerations of enthusiasts, and relying most of all upon the stern logic of facts. Unexasperated by failure, and unspoiled by gratified ambition, he was the same persistent worker for the elevation of his kind, sincere in soul and jocund in spirit, more than half convinced that he might possibly be living in the Augustan age of Medicine. As an educator, familiar with the best minds in the field of his vocation, he steeled himself against irreverence for the past, conscious that " the wit of many had been before his own," and acquired a spirit of humility to which was added a native gift of generalization, that flashed its light upon the many obscurities that beset the delver after truth. To him fantastic honors were as dross. His training by self-imposed tasks and faithful toil could not, I ween, have been better, nor his knowledge of obstacles more improved.

The story of Dr. Taylor's life is like unto that of most physicians—to the public uneventful, yet abounding in unappreciated acts of kindness. Many doubtless, as in common with our class, may have called him blessed only in whispers, and many, too, may have assailed him with unjust rancor, but he was neither spoiled by the one, nor deterred by the other. His work was of that routine sort though none the less worthy because of the every-day necessities which called it forth. It may not have been characterized by the dramatic fervor of the coastman at a life-saving station, but it was marked by equal responsibilities and often with a more conspicuous judgment. His, in no sense, therefore, could ever have been a bald biography; although much was not on the surface, still great was the wealth in the depths.

With him a piquant, playful, quizzical humor, in which there lurked the wisdom of the sage, set off many a point and lodged it in the mind forever. There was an exuberant raillery as well but it was stingless. An old-school urbanity, suffusing every phase of circumstance, more than once stood him instead of the keenest satire—with him a happy hit often served the purpose of a savage denunciation, discomforting without wounding. With his good humor and indescribable charm of deportment, he tolerated what he could not admire and was in all circles known as the single-minded champion of truth. Honest in his dealings with the reputation of others, frank in controversy, setting down naught in malice, apologizing with a genial smile for petty foibles, he might be said to have triumphed literally without gaining an enemy. Thus, if he failed of the victor's crown, he likewise missed the martyr's. His may not have been the dancing plume of Henry of Navarre, but his was the javelin staff which kept in line Rome's Tenth Legion—for he was content to be with it and of it—only a unit in Rome's history and Rome's glory. He desired to be merely a part, not the all-in-all. Not allowing himself to be cloyed with the sweets of life, his industry kept him from temptation and had he been less of the philosopher, from ruin. Not anxious for notoriety, and untainted by the spirit of trade, he never had reason to regret the failure of the trivial arts which, beginning in deceit, invariably end in disaster. He never posed before the public—for he coveted not a bizarre reputation—the honest coin of medical respect was recompense enough for him. Thus, if his name was not paraded, it certainly was never bedraggled. In this respect, there could have been no self-abnegation for there was no enticement. Of all things he hated shams the most.

To him there came no visions of quiet villas by placid lakes and a sumptious hospitality to feed an empty vanity; he had higher aims—he chose the rugged paths of philanthropy, he busied himself with the problems of medical education, imbued the young with an enthusiasm for their calling and taught that old but ever true apothegm, that there could be no excellence without labor.

Although a desultory reader he had a marvellous memory and the nimble faculty of pigeon-holing his facts. He studied subjects topically and with a scholarly zeal keeping himself above, what Lamb describes as "a placid state of little wonderments;"—he did more, he winnowed, tested and weighed so that nothing of value might be rejected.

With gifts and methods such as these what wonder that he became a diagnostician of exceptional accurracy. Too earnest to be misled by prattle, he still did not play the cynic but was ever ready to salute the truth and hail the coming man. Not always honoring the vernacular, occasionally grandiloquent, sometimes obscure, but never untruthful, and without favorites save those who, like himself, measured their leaders before they suffered themselves to be led, he yet had the happy faculty of answering sententiously and holding his own in debate. As a teacher not quite up to the grade of genius, he was both suggestive and amply equipped. He blazed many a path and many walk therein. Moreover, the mind of Dr. Taylor was cast in an æsthetic mould; he admired analogical law above aught else in science. He had the artistic sense; the volumes of his library were marvels of taste in binding and his own pamphlets were abundantly illustrated, A fine plate always delighted him, and he never begrudged one to his readers. No one could be at more pains to drape his nouns with adjectives and no one would fight more vigorously for his text. His style, however, always savored too much of haste in writing and he always had an impatience of revision. His friends, indeed, were wont to accuse him of literary aspirations, but he would turn the discussion with a bland smile by way of a half admission, that the surmise might not have been without a foundation. As an instance of what he did in this direction there is herewith appended a partial list of his contributions.

1. Report of cases peculiar to females and nervous diseases, treated in the New York City Dispensary, read before the New York Medical and Surgical Society, in November, 1840, and published at the request of Dr. Alexander H. Stevens in the *New York Journal of Medicine and Surgery*, Vol. IV, for January, 1841. This paper was among the first which referred to the use of the speculum.

2. He edited Dr. Emory Kennedy's work on Auscultation, with numerous plates and notes, unfolding the views entertained by Stoltz and Cazeau concerning the cervix uteri. This was published in 1843.

3. Remarks on the use of "Liquor Hydriodate of Arsenic and Mercury in Cutaneous and Uterine Diseases." Published in the *American Journal of Medical Science*, for April, 1843.

4. On Rheumatism of the Uterus and Ovaries, read before the Pathological Society, in New York, March 12, 1845, and published in the *Journal of Medical Sciences*, July, 1845. Of this essay, he candidly admitted that it contained many crudities of thought, of which subsequent study had completely rid him.

5. Report of cases of Aphonia and Syphilitic Unceration of the Larynx, treated by the Sponge Probang, with the Solution of Nitrate of Silver, read before the New York Medical and Surgical Society in April and published in the May number of the *New York Journal of Collateral Sciences*, 1845.

This paper brought about the appointment of a committee, which consisted of Drs. Gordon Buck, John A. Swett and T. Campbell

Stewart, charged with the duty of reporting on the propriety and feasibility of such a procedure.

6. Paper on Protusion of the Eye, resulting from Rheumatic Inflamation of the Tunica Vaginalis Oculi, in *New York Medical Times*, June, 1845.

7. Protrusion of the Eye, or Exopthalmus, and enlargement of the Thyroid Gland, as a sequence of Anæmia. *New York Medical Times*, with a plate, December, 1852.

8. Syphilitic Mucous Tubercles and Secondary Syphilitic Affections of the Os Uteri; and Hereditary Transmissions. *New York Journal of Medicine*, May, 1853,—republished in several German Journals, and read before the Society of Medical Inquiry, April, 1853.

9. Monograph on the Sunburnt Appearance of the Skin, as an Early Diagnostic Sign of the Supra Renal Capsule Disease. Published, with illustrations, in the *New York Journal of Medicine*, September, 1856.

10. Remarks on a case of Regurgitation of the Stomach, successfully treated by the inhalation of Chloroform. Published in the *New York Journal of Medicine*, November, 1856.

11. Case of Labor with Anteversion of Uterus. Published in *New York Medical Times* for September, 1856.

12. Two successful cases of Recto-Vaginal Fistula, cured by a new operation. Published in the *New York Medical Times*, 1856.

13. Observations on the Non-shortening of the Supra and Infra Vaginal Portion of the Cervix Uteri in the full term of Gestation. Read before the Academy of Medicine, and published in the *American Medical Times*, for June, 1862. Illustrated with morbid specimens and diagrams.

14. Case of Procidentia Uteri, of fifteen years duration, cured by Reposition. Read before the Medical Society of the County of New York, and published in the "Transactions of the Medical Society of the State of New York," for 1863.

15. Monograph on "Placenta Prævia," with a resume of the various opinions thereon, etc., etc. Read before the Medical Society of the County of New York, February, 1865, and finally published in quarto, elegantly printed and well illustrated.

16. Monograph on Recto Vaginal and Recto Labial Fittula, operated on after a new method. Published in the "Transactions of the Medicad Society of the State of New York," for 1866. This was in corroboration of former views, fortified by additional cases and observations.

Among his later contributions were a paper on Complete Anteversion and Anteflexion of Uterus at full term. *Medical Record,* Vol. XV., page 112.

A paper on "Non-shortening of the Cervix Uteri during Utero-gestation." *Medical Record*, Vol. XII., (1877) p. 644.

Other publications, with the titles as below enumerated, are:

"Labor with Deformed Pelves," "Recto-labial and Vulvar Fistulæ," and remarks on "Puerperal Eclampsia"—all works attesting his zeal, research and unimpeachable judgment, but somewhat marred by his faulty style, in which involved sentences were a feature. More recently his valuable contributions to the "Transactions of the New York State Medical Association," of which he was a founder and ex-president, require a reference to complete the list.

Dr. Taylor held many positions of trust in the medical profession, in which his administrative abilities were fully put to test, particularly as founder and life time president of the Bellevue Hospital Medical College. He had as may have been already inferred, an exceptional experience as a dispensary and hospital physician, he was well versed in methods, and had also been in intimate relations with the medical student, as a clinician, so that the idea of establishing a college in connection with a great institution was only a natural outcome of long cherished convictions. Accordingly he drew up the charter of the Bellevue Hospital College, January 1, 1861, which was eventually adopted by the Legislature and the great school soon after began its prosperous career and still holds its own among the best of our institutions of learning.

Our friend had seen many, many years of an epoch which stretched from the goodly days to the metropolitan whirl—an epoch which in medicine witnessed the rise and fall of many empires of thought—which saw the glorious dawn of anæsthesia in surgery, the change of front from venesection to a trust in nature, the installation of the clinical themometer, the birth of the specialties, the introduction of the instruments of precision and the establishment of Antisepsis. What a procession of notables has passed in review since the coming of Taylor to the city—a stranger in a community with idols of its own—to him in many instances strange gods indeed! What a chronicler might he not have been! How many novelties, blithe and buxom, masquerading as reforms, has he not seen blooming but to die! How many germs of discoveries has he not watched before the growth! What traditions have there not perished with him! How many blinding splendors has he not likewise seen and how many unfulfilled prophecies has he not known! What a roll of names has he not read, and how many hands has he not clasped! How many of the great have there not vanished before him! At last, he himself came to the deep waters and crossed in peace.

Happily for him as for us, our friend was spared "the lean, and slippered pantaloon," the gait of fatuity, the garrulity of age and the vacant stare of a soul gazing through ruins. A serene old age was his, which stopped short of both mockery and regret, where there was neither shambling nor a staff, but the pardonable consciousness of having won his worth at the expense of no man's execrations—an optimist with ruddy face and beaming eye to the very end—dying so gently, with book in hand, that his life seemed to have gone out like an exhalation in the gloaming.

EDITORIALS.

THE HEREDITY OF TALENT as a practical subject, must have had interested thinkers and observers even before man had learned the habit of recording thought. When the clew shall be found at last to the labyrinth of conflicting theories on the subject, we will have a guide for the more intelligent reproduction of the human species which, wisely followed, will lead to the steady elevation of the human race.

Comparatively little has been written recently on the subject for Galton's great book was so thorough, his research so wide-spread and his statistics so profuse, that no one else conld find anything new to say about it. His conclusions, however, have never been satisfactory, and he rarely gives any cause for the phenomena which he formulates. He gives us facts as deduced from his investigations, but does not give the clew as to the reason for the facts. His work and that of others interested in the subject of the inheritance of greatness, has led to the general acceptance by thinkers and observers of the following propositions:

(1.) That a great man rarely has a great son.

(2.) That a woman of marked ability often has one or more sons of pre-eminent talent, and that all of her offspring have a high rating intellectually or morally.

(3.) That there is reproduced in children much of the personal character of the parents, not as this often appears to the world, but as it actually exists in the unchanged ego or continued identity of the parent.

It is this unchanged identity of a human being from the cradle to the grave which bears strongest testimony to the immortality of the soul.

It is only with the first two propositions, however, that we will deal as it is only in regard to them that we have a suggestion to make. It is this—A man of talent, of force, of energy and of enterprise draws upon his nervous system when his achievements are high, for all the power of which it is capable.

In his home circle he is generally remarkable for his gentle surrender of will to the domestic influences around him. Many a man of splendid talents is more lovingly remembered in his private circle by the gentle courtesy extended to all, than for the force with which he stirred the intellectual world.

He leaves to his children his fame and much of his character: in this particular they must be much impressed by that of their other parent.

In his lifework his talents have been absorbed.

We will not burden the subject by speaking of the exceptions to this rule, many of which each reader will recall for himself; but we will suggest that when there occurs an exception, when the great man has the greater son, that son has been born very early in his father's career and before the father's full powers have found their future scope. It may be too that the son has had a great mother, but very little can be accounted for by the intelligence of the great man's wife, for it cannot be denied that such a man generally seeks in his life's partner, not his intellectual associate, but the woman who makes no demand upon his highest powers and who rarely wishes to know even the subject of his most important work. His home must be to him as a haven of rest, the spot from which discord is banished, where the sun shines brightest and where the birds of happiness are ever singing their most joyous songs. This is a great man's ideal home, but it is not a home which a superficial woman could create or conduct, and he often fails to realize, when it is too late, that he has mistaken insipidity for sweetness, inertness for gentleness, and satisfied vanity for devoted affection.

The second proposition of which we have spoken as being generally accepted, is, that a woman of superior ability, often has sons who achieve eminence, but there has been no reason given for this, which should not also apply to paternal heredity.

We would make the suggestion therefore, that as a woman's life is more protected than a man's, and, as her duties rarely tax her mental powers to any great extent, her strength is expended in her character, her ability to meet the common routine, as well as the emergencies of life, with wisdom and judgment. The fine intellect which such women have is often not called upon for any literary effort whatever, though she will be, all of her life, a reader and an unconscious critic.

If her surroundings are not calculated to urge forward her intellectual growth, there will be always a large margin of reserved strength, which she freely transmits to her offspring. Even if she is the centre of an intellectual circle, she finds that no great strain is made upon her brain. No one expects her to be profound, and she learns, early in life, that if she is really a "blue stocking," she must wear her skirts very long, or lose the sympathy and love which is the chief necessity to every woman. It must be patent to all, that what we offer is only a clew which we hope will lead to more intelligent study of this subject and we freely acknowledge that we are undefended against the havoc which the consideration of circumstances and environment would appear to make in the regular ranks of our argument. Nevertheless we believe it to be true on the whole.

And this brings us to the so-called Woman Question, a question which, because we have always believed that it would solve itself if time were given it, has never been mentioned in this journal.

It becomes evident then, that in so much as woman leaves the protection of home life and shares with men the publicity and the wear and tear of business and office work, in so far she deprives herself of the probability of having sons who will distinctly elevate the ordinary standard of ability in business or professional circles. If she enters at an early age the arena where her opponents are men, she is obliged to adopt the "pace which kills," because the ordinary pace is positively unsuited to her nervous organization. If she enters the arena late in life, when the child-bearing period is passed, she can, if she has strength of brain and body, achieve much which is useful. But it is always at the expense of other powers, purely womanly, which can be turned to better account in her private sphere and generation than in public life where men easily deceive her and outwit her.

We hear the term *strong minded women* used, and some women have seemed proud of such a distinction, but in point of fact we believe that few such women have ever existed. Great minded women, who would be the last to claim the distinction, have in every century been famous, but if we think that strong minded women, generally recognized as such, are among us, we mistake the facts. Catherines are not uncommon but Petruchios are scarce.

THE CENTRAL TEXAS MEDICAL ASSOCIATION met at Waco, Texas, January 14th, 1890. We regret very much that the full report of this meeting reaches us too late for more than a passing notice. About seventy members were present, and they discussed with much interest and animation CEREBRO-SPINAL MENINGITIS—upon which subject Dr. J. C. J. King read a paper: HÆMORRHOIDS, the discussion being opened by Dr. J. E. Brown, and bringing out much difference of opinion; Dr. O. F. Halbert presented a case of what he was disposed to call progressive Universal Myelitis, which interested the Association for some time. Many other interesting cases were discussed, and Dr. W. C. Blailock read a paper on Cystitis, which was largely discussed, and for which the author received a vote of thanks from the Association. Dr. N. A. Howard read a paper on DISEASES INCIDENT TO DENTITION, in which he claimed that babies were too much "doctored" and had their gums lanced entirely too much. He met with much opposition to his theories, but they were in the main no doubt correct. The address of Dr. Ghent was said to be very fine, and we hope to publish it in the April number of the JOURNAL. The President, Dr. Ghent, and the Secretary, Dr. W. O. Wilkes, and the Treasurer, Dr. S. E. Shelton, were re-elected by acclamation. The next meeting will take place April 8th, 1890.

THE Maryland Colleges are continuing their good work in agitating the elevation of medical education. They are very much in earnest, and cannot fail to achieve something, although this will probably not be as much as they expect. The fact however that their ideals are high, makes it likely that their achievement will be positive and permanent.

Present usefulness to the greatest number would strongly suggest that the upward movement should be gradual and steady rather than startling and paroxysmal. It is believed that better results will thus be obtained, and that the students will not be demoralized at the outset as they would be if they believed the reforms to be beyond their reach.

THE STATE MEDICAL SOCIETY OF NEW YORK—Albany, February 6, 7, 8.—As the weekly journals have given in detail the proceedings of this society, we will not do more here than record the facts that its last meeting was deeply interesting and many valuable papers were read, some of which will be published in the April number of this JOURNAL. An abstract of one appears in our Abstract Department for the present month. The meeting was harmonious, and accomplished in a few days much excellent work.

THE Surgeon-General of the Army calls attention, in a circular just issued, to the fact that an Army Medical Board will meet in New York City, May 1st, to examine candidates to fill seven vacancies in the Army Medical Service. These examinations are becoming yearly more difficult, and frequent unsuitability of the Examiners, renders the work of "passing the Board" perplexing and almost impossible to many very well prepared applicants.

AS THE USE OF ELECTRICITY IN GYNÆCOLOGY is probably more interesting at this time to physicians, than any other subject, we have taken the opportunity in this number of the JOURNAL to present the matter in various lights.

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GAILLARD'S MEDICAL JOURNAL.

VOL. L. NEW YORK, APRIL, 1890. No. 4.

ORIGINAL ARTICLES.

ARTICLE I.

THE PHYSIOLOGICAL ACTION, AND THERAPEUTIC USES OF THE WATER OF THE GREENBRIER WHITE SULPHUR SPRINGS, W. VA.

By WM., C. DABNEY, M.D. Prof. Practice of Medicine, etc., University of Va.

Some years ago, when considering the different health resorts, I was struck with the absence of any definite statements of recent date, with respect to many of the mineral springs of this country. My attention then was chiefly directed to the Western resorts, where I was compelled to go for my own health. Much good work has been done, of late, in the study of climatology so far as it applies to the treatment of phthisis, but it is remarkable that many of the mineral springs have received so little attention.

I propose in the present paper, to consider very briefly, some of the physiological effects and therapeutic uses of the water of the Greenbrier White Sulphur Springs. The material has not yet been collected for a thorough study of this water, but I think that this contribution to the subject may be of some use to physicians, in selecting a suitable health resort for their patients. In making such a selection, there are some points to be considered.

1. The effects of the water itself.
2. The climatic and atmospheric conditions of the place.
3. The facilities for obtaining proper food, and the comforts required by such people.

The first of these points, is, of course, the one of most importance, and about which the opinion and observation of a medical man would be of most value; but the other points, while perhaps not *essential,* are far from being unimportant, but time and space will not permit any consideration of them in this paper.

I shall consider the White Sulphur water for the sake of convenience under the following headings:

1. The character of the water.
2. The physiological action of the water.
3. The therapeutic action of the water.

1. The character of the water.

The white Sulphur Spring water is very clear, and singularly "light" when taken into the stomach even in large quantities. Its temperature is about 62° Fahr. It has a very strong taste of sulphuretted hydrogen, and it contains in each pint, according to an analysis made before the war (there has been none made since) about 4.5 grains of sulphate of magnesia, 9 grains of sulphate of lime, nearly 1 grain of carbonate of lime, and small quantities of various other salts. It contains also, carbonic acid, and sulphuretted hydrogen gases.

2. The physiological action of the White Sulphur water.

(1.) *The nervous system.*—I did not see any of the stimulating or exciting effects which have been attributed to the use of this water by Dr. Moorman.* There was, it is true, in many cases, a considerable degree of exhilaration, but the freedom from care and anxiety, and the bracing influence of the pure mountain air, was amply sufficient to account for this, and the sulphur water could not justly be credited with such a result to any appreciable extent.

It is a matter of common observation too, that persons usually sleep more while at the White Sulphur than they do at home; but this, like the exhilaration, is due rather to the change in the mode of life than to the use of the sulphur water. Great relief is obtained in certain cases of neuralgia from the use of the water, but the relief is not due to any *direct* action of the water, upon the nervous system, but to the removal of the causative condition, such as gout, etc.

(2.) *The circulatory system.*—The internal use of the water seemed to have little or no *direct* effect upon the circulatory system. In no case which I saw either in health or disease was there any quickening of the pulse, or other circulatory disturbance which could fairly be attributed to the use of the water, except in two cases, in which there was great weakness of the heart's action.

When a hot sulphur bath was taken there was, of course, a temporary acceleration of the pulse, such as is always caused by a hot bath; but the mineral ingredients of the water had nothing to do with this acceleration.

(3.) *The digestive system.*—It would be inferred from the composition of the white sulphur water that it would, if taken in sufficient quantity, act freely upon the bowels. Experience shows that this is the case and copious exhausting discharges may be caused by its injudicious use. I attended one gentleman, for instance, who had but a short time to spend at the spring, and desired to get as much benefit from the water as possible during that time, so he took *nine* glasses of the water at one time. When I saw him a few hours later, he informed me that had had twelve actions from his bowels, and had vomited twice.

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* Mineral Springs of North America.

It is of interest to notice the character of the actions produced by this water—they are very bilious, a condition which might reasonably be expected in view of Rutherford's experiments with cholagogues.

(4.) *The urinary system.*—Not less interesting and important was the effect upon the urinary organs. In nearly all cases the moderate internal use of the White Sulphur water caused a very great increase in the quantity of urine discharged ; nor was this increase due simply to the excessive flow of water, for the specific gravity was but little lowered, showing that the amount of urinary solids was also increased.

(5.) *The cutaneous system.*—In quite a number of cases there was quite free perspiration observed, but it is questionable, I think, whether the *constituents* of the water had any influence in inducing it ; it was probably due rather to the quantity of water consumed than to the quality. The hot sulphur baths, of course, caused profuse sweating, but it is highly probable that this was due chiefly, at least, to the temperature of the water and not to its constituents. There was one very striking change observed in the appearance of the skin from the use of the sulphur water. In cases when it was sallow, and there was also a redness of the surface as if from some passive congestion, there was often an astonishing clearing up. The improvement in these cases was due, in part no doubt, to the change in the mode of life, but the improvement in the action of the excretory organs, and the general change in the condition of the system, consequent on it, was clearly attributable to the use of the water.

The foregoing statement of the physiological effects produced by the sulphur water indicates in a general way the class of cases in which it may be beneficial or injurious.

It may be stated once for all that it is not a *tonic* and that persons who are suffering from simple debility or anæmia will not be benefitted by its use. Sometimes it may be of service as a *preparation* for the use of chalybeate waters which act better when the eliminative excretory organs are in proper condition, this is especially observable in those cases in which the anæmia is due to chronic malarial poisoning. Experience has shown that such patients derive great benefit from the white sulphur water, and such an improvement might reasonably be expected from the morbid changes which are observed in malarial affections. The general statement may be made furthermore that the water is beneficial in that class of cases in which the elimination and excretory organs are torpid, and when it is important to remove waste or noxious matters from the system.

It will be well to consider briefly its influence in certain special diseases in order to illustrate this general statement.

1. In *gout* it has been found of very great service by stimulating the liver and kidneys to greater activity and thereby increasing the oxidation of nitrogenous matters and the discharge of waste products. I do not know that a permanent cure can be obtained in this way; certainly it cannot unless the patient makes his mode of life conform to the requirements of his health; but I do know that in most cases relief can be obtained for many months. The hot sulphur baths are of decided service in these cases also, because they stimulate the action of the skin and in that way lessen the work to be done by the kidneys. There have been no *sulphur mud baths* at the White Sulphur up to this time and consequently I had no opportunity to test their value. At Neundorf and Eilsen they have been found far more serviceable than baths of sulphur water and in view of the success which has attended their use abroad it has been determined to establish them at the White Sulphur.

It is a matter of doubt, I think, whether the sulphur in the ordinary bath has much influence in gouty cases; undoubtedly it has *some*, but the *temperature* of the water, which can be regulated by turning steam into it, is of far more value. It is generally conceded, however, that the *sulphur mud baths* are far more active and decided in their results.

2. In *chronic rheumatism* excellent results are sometimes obtained from the use of the sulphur water in combination with the hot baths. Usually it has seemed to me that the hot spout bath has been most beneficial; certainly it gives greater relief. At the sulphur springs of Europe the sulphur *mud* baths have been found especially useful in chronic rheumatism of the joints. The internal use of the sulphur water does some good in these cases, too, but I did not get nearly as good results in rheumatism as in gout. One cause of this no doubt is that chronic rheumatism requires a much more prolonged treatment than gout before relief is obtained, and patients are often unwilling or unable to spend the requisite time at the springs.

3. I have been especially struck with the benefit obtained from the sulphur waters in cases of *chronic malarial poisoning*. It is especially useful in those cases when the spleen is much enlarged, the liver torpid and the bowels inactive. In some cases of neuralgia, too, which were apparently malarial in their origin, very great benefit is obtained. If we recall the fact that in malarial affections there is a chronic congestion of the liver and spleen and often of the other abdominal organs, and further that the sulphur waters increase the action of the liver itself and acts on the bowels also we can readily understand why it is that so much benefit is obtained by malarial patients at the White Sulphur. Of course the change of climate is exceedingly beneficial, too.

4. Experience has shown that cases of *lead poisoning* are very much benefited by the White Sulphur water. Brunton states that lead is eliminated by the kidneys in part but chiefly by the intestinal canal. Now it is obvious that any agent which will increase the action of these eliminative organs will be beneficial in cases of chronic lead poisoning and we have such an agent in the sulphur waters.

5. It has been claimed for the white sulphur water that it is useful in certain cases of *chronic diarrhœa*. I have seen but few cases of this disease in which it was tried, but in none of them was there any improvement; it is very probable that it would be useful in cases of irregular diarrhœa consequent upon defective secretion of bile and fermentation of the food in consequence, but it is inapplicable in other cases. In cases of *chronic duodenal catarrh*, on the other hand, it is exceedingly valuable and some most striking results have been obtained in these cases.

6. In affections of the *urinary organs* sulphur waters are in some cases beneficial and in others positively injurious. In cases of *acute nephritis*, even when the amount of urine secreted is small, they do no good and may do harm by their irritating effects.

In the chronic forms of Brights, too, in which the amount of urine discharged is greatly increased, they are injurious rather than beneficial; but in those chronic cases in which the quantity of urine is diminished while there is no acute inflammatory change going on in the kidneys much good may be accomplished by their use.

7. Finally there is a large class of cases, composed chiefly of business men, who lead sedentary lives and perhaps indulge freely in the luxuries of the table, in which the white sulphur waters are of very great benefit. In such cases the eliminative organs are torpid, the bowels often irregular or constipated, mental work costs an effort and

life seems almost a burden. A total change of *any* kind is of inestimable value to such persons, but the stimulation of the excretory organs, which the white sulphur water occasions, adds wonderfully to the good effects of the rest and change.

The following conclusions seem to me to be warranted:

1. The white sulphur waters have little or no effect upon the nervous system of healthy persons. The relief from neuralgia which is so often obtained from its use is due chiefly to the elimination of waste matters which acted as irritants to the nervous system.

2. There is no effect produced on the circulatory organs by this water when taken internally. Hot baths cause quickening of the pulse just as any other thermal baths do.

3. The effects of the water upon the digestive system is to cause an increased flow of bile and increased action of the bowels. These effects are very marked.

4. With respect to the *urinary organs* there is a very marked increase both of the water and the urinary solids from the use of the white sulphur water.

5. Sweating is caused by the internal use of the water in considerable quantities and still more by the use of the hot sulphur baths.

6. Sulphur waters are injurious in cases of simple anæmia and debility unless the debility or anæmia be due to some toxic matter in the body (as in malarial cases) when they are very useful in preparing the system for the use of tonics and chalybeates.

7. The white sulphur water is very valuable in diseases due to a defective action of the eliminative organs and in those diseases in which the excretory functions are impaired. Such as (1) gout, (2) rheumatism, (3) chronic malarial poisoning, (4) chronic lead poisoning, (5) chronic duodenal catarrh and catarrh of the bile ducts, (6) certain cases of chronic Bright's disease.

8. It is equally valuable in those cases in which there is no actual disease, but in which the liver and bowels are inactive as a result of sedentary habits and over-indulgence in the pleasures of the table.

ARTICLE II.

REPORT OF FOUR CASES OF SUPRA-PUBIC CYSTOTOMY, WITH REMARKS.*

By A. VANDERVEER, M.D., Professor of Didactic, Abdominal and Clinical Surgery, Albany Medical College.

At the meeting of the American Surgical Association, for the year 1887, a very valuable discussion of the various methods of treating vesical calculus, and exploration of the bladder took place. Drs. F. S. Dennis and John H. Packard furnished two exceedingly interesting contributions on supra-pubic cystotomy, and I, myself, looked into that operation with especial interest in relation to its application in the treatment of stone, and bearing upon the paper I then presented, "To What Extent Can We Classify Vesical Calculus for Operation?" At that time supra-pubic cystotomy was fairly reviewed, and had many eminent and enthusiastic advocates. On the other hand the operation was very cordially condemned by others. I remember very well the statement of Dr. Agnew, "I have always said that I do not see the advantage of going on top of a house to get in it, when an entrance can be had on the ground floor." About this time Mr. Reginald Harrison had written very forcibly and intelligently upon the perineal route to the bladder for the delivery of stone, and drainage for the relief of cystitis with prostatic hypertrophy. Sir Henry Thomson also had just published his monograph on tumors of the bladder, advocating the median perineal incision for their removal. These views together with the mortality following supra-pubic cystotomy, the fear of urinary infiltration, the vexed question of drainage, etc., led me to adopt the procedure of Mr. Harrison and Sir Henry Thomson in the management of tumors and cystitis requiring drainage. My results were disappointing, and I was satisfied that we must look to supra-pubic cystotomy for more perfect results. At the meeting of the American Surgical Association for 1888, a paper read by Dr. Hunter McGuire, on "The Formation of an Artificial Urethra in Prostatic Obstruction," made a profound impression on my mind, and I resolved upon a wider application of the supra-pubic incision.

Case I.—Mr. L. H——, æt. 46 years, married, native of United States, and by occupation a carpenter, entered my services at the Albany Hospital, November 26, 1889. The clinical history is as follows:

Father and mother died at an advanced age; whole family very vigorous; an uncle died of cancer; patient himself was never strong.

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* Read at the Meeting of the Medical Society of the State of New York, February 5, 1890.

When a youth he was thrown from a horse and sustained a rupture of the left testicle. Since accident has always suffered from local neuralgic pain. After continued treatment the testicle, which was atrophied, was removed December 1885, with complete relief. At this time he had a slight hæmorrhage from the bladder, but continued in good health until the spring of 1887 when there was a return of the hæmaturia, together with vesical tenesmus and retention of urine. This condition did not improve, and he entered the hospital December 28, 1887. The urine contained pus, blood and mucous, but the kidneys seemed free from disease. The exploration of his bladder with a searcher was attended with great difficulties, and could only be accomplished under anæsthesia. An irregular mass could be made out on the left side of the bladder. January 3, 1888, I operated for removal of the growth. The incision for median lothotomy was made into the membranous urethra; the neck of the bladder dilated, and a mass the size of a small orange removed by the use of the currette and forceps. The bladder was irrigated with borated solution, a full-sized catheter introduced through the perineal wound for drainage; the patient recovered with usual after treatment and returned to his home. After his discharge he continued the irrigation of the bladder per uretham, and for a time was in a fair condition of health. However, during the summer there were slight hæmorrhages, and later his old symptoms returned. I advised that he re-enter the hospital and submit to a supra-pubic cystotomy. November 30, 1888, the operation was done. The incision was somewhat embarrassing as the abdominal walls were very fat. The digital exploration of the bladder revealed a papillomatous mass as large as an apple on left and anterior wall of bladder. This was removed with finger and curette. Hæmorrhage was very free, but was controlled by irrigation with hot, borated solution. A Trendelenbeg drainage tube was introduced and the lower portion of the wound closed. A syphon was attached to the drainage tube and carried over the side of the bed into a vessel. An attempt was made to acidulate the urine by a free administration of citric acid, thereby producing asepsis. Patient did well. Bladder was freely irrigated through the wound with comfort to the patient. His appetite was capricious and he remained in the hospital for some time. The healing of the wound was somewhat embarrassed by the deposit of phosphates around the edges, with slight suppuration. He returned to his home although a slight cystitis remained which was relieved by irrigation. He has kept me informed as to his condition, and is now, after fourteen months, free from his old symptoms.

Case II.—Mr. D. S——, æt. 19 years, single, native of United States, and by occupation a clerk, entered my service at the Albany Hospital, April 26, 1889. Family history good, previous health good. November, 1889, patient was seized with a chill, pain in the head, back and pelvis, high fever and frequent micturition. A severe cystitis followed. The urine was ammoniacal filled with pus, and mucus, and at times contained clots of blood. An attempt at irrigation caused so much distress that it could not be repeated. About this time patient began to have attacks of vesical spasm, requiring much morphia to afford relief. He could not assume an upright position. In this condition he was brought to the hospital. Exploration of the bladder, either by sound or cystoscope was impossible without anæsthesia. I advised supra-pubic cystotomy. The operation was done May 8, 1889. Section revealed a bladder free from stone, but with contracted and thickened walls. Mucous membrane was studied with tubercular masses, many of which had broken down into ulcers. The wound was partially closed with sutures and a soft rubber drain introduced. Spasm compelled an immediate removal of the drain. Hypodermic injections of distilled water would at times relieve the pain. Bladder was washed with borated solution, his appetite improved and he gained in strength. He returned to his home in the country June 22, 1889. His condition did not change materially, although he was able to be about. Sinus did not close, but when the bladder was washed through the urethra, solution and urine came from it. During December he became worse, and died December 30, 1889. No autopsy permitted.

Case III.—Mr. H. D. W——, æt. 47 years, married, native of United States, entered my service at the Albany Hospital, March 7, 1889, with diagnosis of stone in bladder. Family history good. Patient had suffered over seven years from repeated attacks of renal colic. After one of these attacks had severe burning pain in penis, but at that time I was unable to find to find calculus. Had not consulted any one from the time I first sounded him with a view to operation. For last two years has suffered severely and was compelled six months ago to give up business. His urine now contained pus, blood and mucus in great quantities. He had hæmorrhage from bladder and lost flesh and strength. I advised supra-pubic cystotomy, which was done March 5, 1889, and a single phosphatic calculus was found weighing 530 grains. Patient left hospital with wound completely healed April 8, 1889. His cystitis was cured and he had already gained in flesh and strength.

Case IV.—Mr. R. M. F——, æt. 65 years, married, native of Scotland, came to me with the following history in May, 1889.

About a year ago he had passed with his urine fine sand, and suffered greatly from vesical irritability. There was pain in the glans penis, stoppage of stream and slight hæmaturia. The searcher employed at that time by family physician, failed to reveal calculus. He was treated by usual remedies and had his bladder washed out at intervals by family physician, Dr. A. T. Van Vranken. Under this management he improved and was in fair health until March, 1889, when all of his old symptoms returned with increased violence. The urine was ammoniacal and contained pus, blood and mucus in large quantities. There was considerable prostatic hypertrophy. The searcher revealed stone. I advised a supra-pubic cystotomy, and drainage. The operation was done May 29, 1889, the usual technique being employed. I not only removed one, but five calculi from different pockets of a sacculated bladder. A Trendelenberg drainage tube was introduced, and the wound partially closed to secure sinus from bladder, after Dr. Hunter McGuire's method. The old gentleman was comfortable after operation, his bladder was washed daily with boric acid solution, and he left the hospital June 24, 1889, with the fistula established. His cystitis was greatly improved. The sinus soon healed after leaving the hospital, and the bladder returned to its normal condition.

While my experience with supra-pubic cystotomy is not sufficiently great to make a personal generalization valuable, yet I feel that a comparison of it with other operations done by me for similar conditions might not be amiss. First, I am sure that I am able to explore more thoroughly by the supra-pubic than by the perineal incision. More especially is this true where the patient is fat and has a deep perineum. My first case of supra-pubic cystotomy, here reported, was for the removal of a papillomatous growth. I had already operated in the case by the perineal method, recommended until recently by Sir Henry Thomson. The subsequent history showed that the second operation was much more successful than the first. The facility with which the operation was done the second time, showed a great improvement over the first. The growth was more accessible, the hæmorrhage more easily controlled, and by the Trendelenberg position, with the use of the electric light, and suitable retractors, an inspection of the field of operation was possible. Drainage was satisfactory. In the case of tuberculosis of the bladder, the diagnosis was surrounded by great difficulties. At that time there was no tubercular deposits in the mesentery, testicles or epididymis. Primary tubercle of the bladder is exceedingly rare.

In this case the exploration was necessary to complete diagnosis. I am convinced that the same principles that are involved in the exploration of other organs should be applied to the exploration of the bladder. Again, the experience of surgeons with tuberculosis of the peritoneum has been very satisfactory. Guyon (see 91 Sajous Annual Keys, 1889,) reported two cases of tubercular cystitis treated by supra-pubic cystotomy and the application of iodoform oil to the ulcer. One case was cured two and one-half years later. The other case was improved, and there was an absence of tuberculosis in both after treatment. From analogy, quite as much improvement can be attributed to drainage as to iodoform oil.

The two cases of stone were both accompanied by a severe type of cystitis, one by prostatic hypertrophy, multiple calculi, and sacculated bladder. Litholapaxy is, in my opinion, absolutely contra-indicated in such cases. Permanent lithotomy has often been done, and calculi lying in sacs near the fundus have been overlooked. I have been so unfortunate as to have such an experience. Then, again, I have succeeded better with supra-pubic syphon drainage than with perineal drainage. It is very difficult to maintain an opening through the perineum after median section. Patients tolerate drainage tubes badly, and their removal is often necessary after a few hours. After median lithotomy patients begin to pass urine by the urethra often by the third day. I had a case, not long since, of cystitis from enlarged prostate, in which the perineal section was done for drainage; a day after the operation the drainage tube, which was a large one, slipped from the wound and retention of urine occurred. A good deal more distress was caused in introducing it again, than in the same procedure by supra-pubic incision.

ARTICLE III.

THE TREATMENT OF PELVIC HÆMATOMA, AND HÆMATOCLE, BY GALVANISM.*

By AUGUSTIN H. GOELET, M.D., New York.
Fellow of the N. Y. Academy of Medicine and of the N. Y. Obstetrical Society.

The statement that the usual treatment of these conditions is most unsatisfactory will probably not be questioned—not on account of the ultimate result, for they generally end in recovery, but because of the slow progress towards recovery. It is because I have found that the treatment here advocated has produced better and more satisfactory results than the usual methods, by very much shortening the period of convalescence and lessening the sufferings of the patient, that I have been induced to present it for your consideration. Although the terms are used together, and in a general way, the treatment of both will be described as the same, I intend to make a distinct difference in them, using the nomenclature adopted by Dr. Ely Van de Walker. The term hæmatocele denotes an effusion of blood into the peritoneal cavity of the pelvis, and hæmatoma signifies an effusion of the same into the pelvic cellular tissue or between the folds of the broad ligament and *under* the *peritoneum.*

I do not think that abdominal section is ever justifiable in these conditions, where suppuration is absent, except when collapse is imminent from an uncontrollable hæmorrhage into the peritoneal cavity, a condition which I have never met, and it has been my misfortune to have to deal with a number of severe cases. I have been quoted as having operated for a sub-peritoneal effusion, but it was unintentional, the tumor being mistaken for a cyst. In exoneration I should state, that the patient was sent to me from a distant part of the State, and gave no history which would lead to a diagnosis of hæmatoma, and was under observation only a few days before the operation was decided upon, because she was anxious to have it out and return home. I might add, also, that the diagnosis was confirmed by an authority on pelvic tumors. The patient recovered after a prolonged convalescence, and has since borne a child, but a cure could have been affected in half the time without confinement to bed, and with absolutely no risk by the method of treatment to be described in this paper.

There are four chief indications to be met in the treatment of this accident. 1. To check the hæmorrhage when the case is seen early enough. 2. To produce a coagulation of the effused blood as quickly as possible, and prevent a recurrence of the hæmorrhage. 3. To relieve the pain and inflammatory complications. 4. To effect absorption of the clot and prevent the formation of abscess; and I might add, a fifth to shorten the confinement to bed as much as possible.

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* Read before the New York Academy of Medicine, Section in Obstetrics and Gynæcology, Feb. 27, 1890.

Those who do not fully comprehend the varied action of the galvanic current will not be able to see how it can be made to meet such contrary indications as are demanded in the conditions under consideration, but I trust it will be made clear to them by what follows. (Mind you, it is not recommended to the exclusion of other remedies which may be useful, and with which you are so familiar that they need not be mentioned here.)

The actions of the two poles upon living tissues are directly antagonistic; the one relieves pain and congestion, and the other rather tends to produce it. The alkalies are attracted to the negative pole and the acids go to the positive. Fluids are attracted to the negative pole, and it is known as the fluidifying pole. It produces an effect analogous to the application of a blister or tincture of iodine, but the influence is much greater and the penetration deeper. This peculiar influence extends a considerable distance beyond the point of contact of the electrode.

The acids which accumulate at the positive pole produce coagulation of the elements capable of undergoing that change. While the greatest effect is noticeable nearest the point of contact of the electrode, this action is extended for some distance from it. This pole will likewise promote absorption but the negative is more powerful to produce this effect. The positive pole relieves pain and congestion, and favors coagulation, while the negative promotes absorption.

It will be seen, then, that we have in galvanism an agent which, by varying the manipulation, may be made to exert opposite influences, and at the same time, it is completely under the control of the operator who understands it. We have only to diagnose the indication correctly and apply the remedy accordingly.

To meet the *first* and *second* indications, the positive pole is used conjoined with absolute rest in the horizontal position until all danger of a recurrence of the hæmorrhage has passed. This latter is essential particularly in dealing with hæmatocele where there is no limit to restrain the effusion. And though it may be wiser to exact the same restrictions for hæmatoma it is by no means always necessary, and when so, the confinement to bed may be for a shorter period. Sometimes it may only be necessary to exact confinement to the room, with moderate movements, when the effusion is small and limited. Rest is, however, an important auxiliary in the beginning, and when there is no serious objection, it should always be insisted upon.

The positive pole meets these indications by promptly relieving the congestion which has provoked the effusion, and causes its continuance; and by producing a rapid coagulation, not only in the effused blood, but also in the open end of the ruptured blood-vessel. This may be accomplished in two ways; *first*, by an application through the vagina by means of an electrode well protected to prevent a local caustic action, and a current long continued, commencing with 30 or 40 milliampéres, and very gradually increasing until 100 milliampéres are reached at the first sitting. The electrode connected with the negative pole should be so placed as to include the mass directly between it and the positive electrode in the vagina. In order to include the whole within the influence of the current it will often be necessary where there is a large accumulation to use a bifurcated cord from the negative pole of the battery and place one large clay electrode on the abdomen and another on the back. It is needless to say, that the arrangement for turning the current on and off, should be such that it can be done very gradually; and it is always better to use a rheostat for this purpose. This application may be repeated once or twice a day according to the exigencies of the case, until the end to be obtained has been accomplished. The *second* method of meeting these two indications is by the positive vaginal galvano-puncture. The puncture is made with a very small needle (insulated only up to the point of penetration) into the mass as felt through the vagina, the preference of location being always posterior to the cervix, and the direction being in the axis of the pelvic brim to avoid the rectum. The depth of penetration need not exceed one centimetre. The strength of the application may be 50 milliampéres used for five or ten minutes. This puncture may be repeated in from three to six days, but always in a new location, and if the condition is urgent and the first puncture has not brought about the desired result the second puncture might be done earlier. But my experience has been in most of those cases where I resort to puncture, (viz. haematoma) that the first will produce the desired effect and indeed it will often be all that is required in a small haematoma. I restrict the galvano-puncture in this stage of the treatment to haematoma, and do not use it in haematocele. The vaginal applications will be more appropriate for the latter condition.

I should add, that these positive punctures should always be done with a platinum needle and never with one which is corroded by the action of the positive pole. When they are done under thorough antiseptic precautions there need be no apprehension of unpleasant consequences. It is a wise precaution, however, to limit the strength of the current so as to avoid a permanent opening from the vagina into the cavity.

To meet the *third* indication, the relief of pain, the positive pole is likewise used, and it acts by relieving the engorgement and producing rapid contraction of the clot, thus removing the pressure upon the misplaced organs. It has been a noticeable fact, that a tumor of this kind which was previously extremely sensitive to touch, will, after a positive galvano-puncture, be almost insensitive and allow considerable manipulation. This effect is not so manifest after the vaginal applications, but they are always followed by marked relief of the pain. I have sometimes, when the distention has been great and the haemorrhage has ceased, punctured with a platinum cannula (under antiseptic precautions) drawn off enough to afford relief from excessive pressure and used the positive pole through the cannula afterwards the same as through a puncture needle. The result has been all that could be desired.

The use of this agent combats the tendency to inflammatory complications, and the formation of abscess. In haematoma these complications should never occur under this plan of treatment. In haematocele a certain degree of inflammation may be necessary to cause complete encapsulation but it is kept under control and is never excessive when galvanism is used properly.

To meet the *fourth* indication, it may become necessary in the stage of convalescence to use the negative pole to hasten absorption, but usually it will take place rapidly under the influence of the positive pole. This is especially true of the positive galvano-puncture when the puncture is confined to the capsule and does not penetrate to the interior of the mass. I have repeatedly noticed complete absorption of a small haematoma take place in from a week to ten days after one puncture of 50 milliampéres. It is unnecessary to exceed this amount, and better to confine the puncture to the surrounding capsule. Some pain may be experienced during the application when there is much local irritation, but the relief is prompt. This rapid absorption produced by puncture with the positive pole may be explained by the fact that the mass becomes negative when the current from this pole is introduced into it and the peculiar influence of the negative pole is exerted around the margin of the clot.

The negative pole should not be used until the clot is firm and all inflammatory action has subsided, and it will likewise be contra-indicated as long as any pain exists, or when its use is followed by pain. With this pole the vaginal applications only are employed. They may be made every second day or daily with a current strength of from 50 to 100 milliampéres for five minutes, and it is well to compel rest for an hour or two after every séance.

After the galvano-puncture rest should be insisted upon until all local irritation has subsided. In the later stage it is better not to repeat the puncture sooner than a week.

By this method of treatment I have been able to curtail the convalescence as well as the confinement to bed at least one-half, and the suffering has been comparatively insignificant. The general condition instead of deteriorating as is usual in these cases after prolonged confinement in bed has gone on steadily improving, so that when the patient is ready to get up she is in a fair condition. In many cases of haematoma the patient may be on her feet again in a week if the case has received prompt treatment from the start.

If suppuration should occur the indication will be, of course, to evacuate and drain. The evacuation must be thorough, the whole contents of the sac being removed, the cavity washed out, and the subsequent drainage must be perfect. In suppurating haematoma evacuation by the vagina is preferred. In suppurating haematocele laparotomy and drainage by the abdomen will probably be indicated, especially if the effusion is large.

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ARTICLE IV.

ON THE SPECTROSCOPIC EXAMINATION OF THE BLOOD, IN CERTAIN EYE DISEASES.

By LUCIEN HOWE, M.R.C.S., Buffalo, N. Y.

The objects of this communication are: 1st, To call attention to a simple and practical method already known of making a spectroscopic examination of the blood; and 2d, To put on record a few observations made of so-called scrofulous and of phlyctenular conjunctivitis, which not only illustrate the value of these examinations of the blood but show the advantages to be derived from different chalybeates in the treatment of those diseases. The so called hemato-spectroscope of

Henoque—has recently been described by him, and I would, therefore, not do more than mention it now, were it not for the fact that on attempting to obtain one in this country, I made three unsuccessful applications to the leading instrument makers in New York, Philadelphia and Boston. A very brief description of it may therefore be warranted. Heretofore the spectroscope has been an instrument better adapted for the laboratory than for the bed-side. It is true that the small portable spectroscopes of Browning have long been sold, by the opticians, as scientific toys, in this country and elsewhere, and it is altogether probable that it it has occurred to others, to put a drop of blood between two pieces of glass—between two microscope slides for example—and holding these in front of the little spectroscope, thus easily demonstrating the blood bands. By a very simple modification of that arrangement after a plan itself not altogether new, it occurred to Henoque to make admirable use of this idea to show not only the characteristic blood spectrum, but also to demonstrate the quantity of hæmoglobine, which a given specimen of blood contains, as compared with the standard of normal blood. This was done by merely tipping the two pieces of thin glass with reference to each other (the microscope slides if desired) in such a way that they touch at one extremity, and are slightly separated at the other extremity containing thus a capillary wedge of blood between them. And this is practically the only peculiarity of the instrument. One of the two plates of glass about the size of a microscope slide has a millimeter scale ruled near one edge crosswise from end to end. The other plate of the same length and perhaps half as wide as the first is smooth. By means of a thin strip of metal overlapping the ends of the former piece the latter can be slipped on to the former and clamped to it. The two pieces of glass thus touch at one end on a line with the point zero of the ruled scale, and are separated from each other at the other end, by a given distance. The wedge of air or of blood thus enclosed, increases in thickness at a known rate from one end to the other. In Henoque's instrument we have the two plates of glass each sixty millimeters in length, and the wedge of blood included between them near the triangular space, increases in thickness from zero on the left where the two plates touch each other, to a thickness of three hundred thousandths of a millimeter or three hundred *micras* at the point marked sixty of the scale. With this arrangement it is easy to know the exact thickness of the wedge at a given point on the scale, at the apex, where the glasses are in contact the thickness of course is zero, at a distance of one millimeter from that point the thickness of the wedge is five thousandths of a millimeter or five micras.

At a distance of 14 millimeters the thickness is 5 x 14 or 70 micras.

At a distance of 40 millimeters the thickness is 5 x 40 or 200 micras.

At a distance of 60 millimeters the thickness is 5 x 60 or 300 micras.

The method of using this instrument is as simple as its construction. The two plates of glass being slipped one over the other, in the manner described, a few drops of arterial blood drawn from the finger are placed over the triangular slit. They at once diffuse themselves by capillary attraction throughout the space, forming a triangular prism of blood. Next, the spectroscope is drawn out to a focus for the eye of the observer to a point when he should be able to see the brilliant band of color crossed by the D line in the yellow, or by this, and other prominent marks. When thus focused, the bands of color are turned so as to occupy a certain position—for example, stretching horizontally, the red being at the left, in order to see this to best advantage, the spectroscope should be directed toward the clear sky, a well illumined window, or other strong source of light—then holding the spectroscope thus well focused and illuminated, with the right hand, the plates of glass enclosing the blood are taken with the left and held in front of the spectroscope, gently in contact with it, and perpendicular to a line passing through the tube. Immediately there flashes out the two dark bands characteristic of blood. If the thin end of the blood prism (the part near zero of the scale) be held in front of the slit of the spectroscope the two bands appear faintly, of about equal size and with the edges blurred; also if a very thick portion of the blood prism he held in front of the slit of the spectroscope, a point for example near 50 or 60 millimeters of the scale, there, too, the characteristic bands may be discerned, but indistinctly, and with the edges blurred. But between these two extremes a point can be found, by sliding the glass plates from side to side, where the two bands are most distinct their edges quite clearly defined and when exactly estimated, the band nearer the red end, is to the other in width, as about 5 to 7. It is not always easy to decide this spot, in the gradual variations, with perfect exactness, the personal equation of the observer being an uncertain element at first. But a little practice tends to eliminate that. In examining thus the normal blood with the hemato spectroscope of Henoque it is usual to find the most perfect bands opposite about 30 of the scale. In other words where the thickness of the prism of blood is about one hundred and fifty thousandths of a millimeter. If the bands appear near that point, there is in that specimen of blood quite the usual amount of oxy-hæmoglobine. If on the other hand it is necessary to slide the specimen along to a point where a thicker portion is viewed in order to see the typical bands this indicates that an anæmia exists, and its degree can be calculated upon the markings of the graduated scale.

In thus, advocating the use of Henoque's spectroscope, I am well aware that it is by no means the only instrument for the determination of the oxy-hæmoglobin in the blood. Nor do I overlook the fact that Wilken's and others consider Fleisch's hæmometer rather more exact. I give preference to this simple appliance of Henoque as being by far the most convenient for clinical use.

Again it might be urged that the proportion of hæmoglobin varies somewhat in different individuals in perfect health and both in health and disease, it has been found that the hæmoglobin is not always in direct proportion to the number of red corpuscles. In other words that the red blood corpuscles may be sometimes rich or again comparatively poor in hæmoglobin. These are possible sources or errors which might with propriety be considered if it were proposed to deal now with the theoretical aspects of the question. For practical purposes, however, in the vast majority of examinations these factors may be disregarded. The importance of them in certain cases does not effect in any practical manner the general result of such examinations.

The second point which I wish to make in this short paper is that with the aid of such an instrument it is possible to ascertain definitely that the diseases known particularly by German writers as scrofulous and phlyctenular conjunctivitis are almost invariably accompanied by, or dependent upon anæmia. I have had an opportunity during the last year and a half to make an examination of the blood of sixteen such cases of typical catarrhal conjunctivitis in children. In fourteen of these there was a greater or less degree of anæmia as shown by the hemato-spectroscope, while in two, this method of measurement as well as the counting of the blood corpuscles showed that the blood was in apparently a normal condition. Why this was, I am not quite certain, and the reasons which might be given for such an exception would necessitate too long a digression here. The observation that I desire to make, is, that although anæmia was present in fourteen out of the sixteen cases, among these patients there were seven who did not present in a typical manner the other appearances of a scrofulous diathesis. They were cases of catarrhal conjunctivitis in individuals who might or might not have been considered scrofulous according to the inclination of the diagnostician. In other words, while the swelling of the cervical glands and the peculiar physiognomy may be wanting in a considerable portion of these cases, anæmia on the other hand is almost uniformly present, and these measurements now made, I think, for the first time, establish the fact that anæmia must be regarded as an almost invariable accompaniment of cases which we have been accustomed to consider as due to the so-called scrofulous condition of the system.

Another class of cases to which I wish to call attention are those described as phlyctenular conjunctivitis. A disease also usually occurring in children, and one which has long been recognized clinically as more or less dependent upon anæmia. Although this condition of the blood has long been suspected, I am not aware that any one has thus far employed any one of the various known methods in order to settle this point definitely. In order to do so, however, I have of late had an opportunity of testing the blood in thirteen such cases and in all but one found that the characteristic bands in the spectrum were seen at a higher point on the scale than is found in normal blood. Moreover, in proportion as some form of a chalybeate was absorbed or improvement followed, so gradually, did the bands approach the place in the scale where they are found for normal blood.

From what has been said it seems fair to infer that the spectroscope is now in a form to be made practically available for the clinical examination of the blood. Although I have simply endeavored here to establish by measurement what has long been known in an indefinite manner by clinical observation as regards two different diseases of the eye. It is probable that in the future other studies will be made thus to demonstrate the condition of the blood, not only in diseases of this organ but still better, in those pathological states of the system which belong to general medicine—In any such observations I believe that the spectroscope is now in a form to be of value to the busy working practitioner as is the thermometer or the microscope. Only by the aid of such instruments of precision can medicine be raised to a place which it must occupy, if ever it is worthy of being classed among the exact sciences.

ARTICLE IV.

RECENT LUNACY LEGISLATION IN NEW YORK STATE AFFECTING THE GENERAL PRACTITIONER.*

By E. H. HOWARD, M.D., Superintendent of Monroe County Insane Asylum. Rochester, N. Y.

On May 14, 1889, the Governor approved an Act passed by the last legislature to establish and organize the State Commission in Lunacy and to define its duties.

Section 7 of this Act defines clearly the requirements of the general practitioner where it says that "one year after the date of the passage of this Act it shall not be lawful for any Medical Examiner in Lunacy to make a certificate of insanity for the purpose of committing any person to custody, unless his certificate of qualification, or a certified copy thereof has been forwarded and recorded in the office of the commission, and its receipt acknowledged."

Copies of this law have been sent to all of the physicians residing in the State and many have already received from the Secretary of the Commission the required acknowledgment. To many others this section seemed of slight importance, and in the busy round of daily duties, escaped attention.

If this condition of affairs should continue until May 14, 1890, and after that date a physician who had neglected this matter, should make a certificate of insanity for any patient to be received at an Asylum, an extraordinary amount of unpleasant difficulty would immediately arise, as the physician in charge of the Asylum is required upon the admission of any patient to promptly forward to the State Commission copies of the Medical certificates and their Secretary would be obliged to take cognizance of the fact that this physician had performed an unlawful act in making this certificate, the results of which would be that the patient, having been committed to the Asylum, could not remain in custody, and the physician who had illegally certified to his insanity would be exposed to all the dangerous intricacies connected with prosecutions for transgressing the law in connection with depriving patients of their liberty in Asylums for the insane.

Also, the relatives and friends of the patient, and the general public, would be thoroughly aroused by the rumor that Dr. So-and-So had been transgressing the law in connection with sending a certain patient to an Asylum, and if the physician should attempt to counteract this by an explanation, the notion would certainly become current that, at any rate, he did not understand his business as a physician, and that some radical defect existed in his qualifications.

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* Read before the State Medical Society of New York, February 5, 1890.

In addition to this, physicians, who are qualified under the 1874 act, but who have failed to comply with this act of 1889, being alive to the impropriety of making an illegal certificate, will suffer pecuniary loss, in not being legally qualified to exercise their professional authority when called upon to certify to the insanity of patients requiring Asylum care.

I presume that it is well understood that no physician is entitled to a certificate of qualification as a Medical Examiner in Lunacy until he has been in the actual practice of his profession for three years.

This is the practical question: Have you received a receipt from the State Commission in Lunacy, acknowledging that your certificate is properly recorded in their office at Albany?

If you have, file it where you can easily find it when needed.

If you have not yet received this receipt, accept my urgent advice, and without delay, have the Clerk of the County of your residence make a certified copy of your certificate of qualification as a Medical Examiner in lunacy, and mail said certified copy to the Commission at Albany, who will acknowledge its receipt.

If you have not the necessary certificate of qualification in your possession or on file with the County Clerk, without delay go to the Judge of the County where you reside and prove to him that you have a right to said certificate in accordance with the law of 1874, and he will readily give it to you.

If it should chance that you have already attended to this business for yourself, and can place your hand, without delay, upon this receipt, then kindly think of your friends in the practice of medicine who could not be here to-day, who for any reason may have neglected this important matter, and call their attention to the law, and remind them of the misfortune to the first case of mental disease requiring Asylum custody which shall come under their care after May 14, 1890, if they continue to neglect the requirements of this law.

Six months of this probationary year have already passed, and very many physicians have failed to comply with the requirements of this law. If it is put off from day to day, it is more than likely to be forgotten.

It is not possible to evade the operations of this law except by a physician's refusing to certify to the insanity of any person.

The better plan is for all physicians to comply with its requirements, promptly and willingly.

By prompt obedience to the law, the Medical Profession can do much to strengthen the hands of the Commission who are required to undertake and accomplish the very difficult task of unifying the whole system of the care of the insane in New York State.

If all physicisns recognize the authority of the law and act accordingly; and if all Institutions recognize the authority of the Commission and obey their wishes, a noble example is placed for implicit loyalty and obedience on the part of all subordinate officers and nurses in charge of the insane. The patients themselves are thereby constantly taught that willing submission to the requests of those in authority, which is the psychological foundation of success in the great work of attempting to have them live in their insanity, so closely in accord with the sane minds about them, that when recovery is possible it comes quickly and easily, and when impossible, their insanity may be so subservient to sanity, that their life may be more enjoyable and less a menace to the community.

ORIGINAL TRANSLATIONS.

THE TREATMENT OF CLUB-FOOT BY PHELPS' METHOD. By M. Kirmisson, *Journal dè Mèdicine dè Paris.* January, 1890.

BY CARTER S. COLE, M.D.

Until the past few years, the treatment of club-foot has wavered between two methods: the orthopædic treatment on the one hand, assisted if desirable, by a subcutaneous tenotomy; and on the other various forms of osteotomy and tarsal resections. Between these two extremes, an intermediate method has come to take its place, consisting in a free and open division of whatever soft parts oppose the correction of the deformity. This is a little indefinite so I give in more detail, the features of the method, first calling attention to the fact, that strong force and *redressement* are to be employed after each tissue cut, and that in exceptional cases in the adult foot, of which Dr. Phelps has himself had one instance, removal of the scaphoid and cuboid bones may be required.

Order of Cutting. 1. Subcutaneous tenotomy of the tendo Achillis.

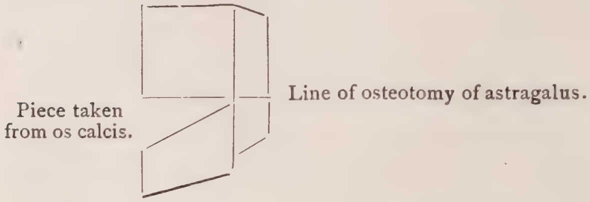
2. Incision one-fourth the distance across the foot beginning directly in front of the inner malleolus and carried down to the inner side of the neck of the astragalus, through which incision the following tissues are cut in the order given:

a. Tenotomy of Tibialis Posticus.
b. " " Abductor Pollicis.

c. Division of plantar fascia through the wound.
d. " " Flexor Brevis muscle.
e. " " Long flexors.
f. " " Deltoid ligament (all its branches.)

3. Linear osteotomy through the neck of the astragalus.

4. Resection of wedge shaped piece of bone, from body of os calcis, the point meeting the linear osteotomy through the neck of the astragalus.



It was in 1884, that Dr. A. M. Phelps, of New York, proposed such a procedure to the Congress at Copenhagen. At the time that the author was giving an account of his method, he had already employed it twelve times, and as it had also been tried by Dr. Post, of New York, and Dr. Higston, of Montreal, he recounted a total of eighteen operations with satisfactory results.

After Dr. Phelps published his method, it rapidly became general. A large number of surgeons have reported successes due to its employment: Shaffer and Bradford of America, Phillipsen and Kapteyn of Hamburg, Levy of Copenhagen, etc.

A recent paper by Noyon, informs us that Prof. Tilanus, of Amsterdam, has adopted Phelps' method. He has employed it twenty times on patients ranging from sixteen months to twelve years of age. In Volkmann's clinic, Phelps' operation has been uniformly adopted in the place of a subcutaneous tenotomy of the tibialis posticus, and a resection of the tarsal bone, at least Büngner's recent work so informs us.

Since 1884, this operation has been employed twenty-one times in the Clinic in Halle, on patients whose ages vary from four months to fifteen years. It has never given the slightest complication arising from the operation and the final result has always been excellent.

Hitherto, this method seems almost to have escaped the attention of French surgeons. For my part, I have seven times had occasion to try it. These seven operations have been performed on four patients because three of them were done for a deformity that obtained in both feet. The first of my patients, æt. four years, had an exaggerated double congenital equino-varus, which had not, when it came to me, received any treatment. With the second patient, the method is still more interesting, inasmuch as the child had already undergone continuous treatment, consisting in a tenotomy of the tendo Achillis done when the child was six months old, and the position maintained by a strong apparatus, assisted by two lateral splints. But in spite of the employment of this apparatus, constantly supervised by the mother and surgeon, the deformity only increased. With my last two patients, respectively, six and three years old, the deformity was present in both feet, and was very well marked, but what adds still more to the interest of these remarks, these two children had previously had done a tenotomy of the tendo Achillis, and an extirpation of the astragalus, without success in overcoming the deformity. In each case, Phelps' operation gave an excellent result.

In short, with all my patients, the operation and its sequelæ have been absolutely free from complications: pain inconsiderable, temperature and suppuration entirely absent. My report is in perfect accord with those surgeons who have published the result of their employment of this method. As have they, so have I obtained most favorable results, as well from the standpoint of the reduction of the deformity as from that of the restoration of the functions. I have already called attention to the fact, that my last two operations were especially interesting, inasmuch as Phelps' operation succeeded, when extirpation of the astragalus had failed. I find in Büngner's work, a similar case that occurred in Volkmann's Clinic. He treated a child, æt. five years, who had already undergone a tenotomy of each tendo Achillis, and after wards extirpation of each astragalus, all to no purpose. Phelps' operation was tried on each foot and at the completion of the operation, it was astonishing with what ease *redressement* was effected. Scarcely any course of orthopædic treatment was necessary to complete the result.

I have said enough I think, to point out at once the charitableness and the efficacy of Phelps' operation. Thanks to it, we succeed, and without endangering our patients, in cases in which the straightening was hitherto impossible, or else necessitated a long and difficult orthopædic treatment, the ultimate results of which were often very uncertain. To it we owe the fact that the different operations on the bones—tarsotomies, tarsectomies, extirpation of the astragalus, will only hereafter be exceptional procedures to be employed solely in very pronounced deformities or else in the inveterate flat-foot of adults.

EXCEPTION TO THE LAW OF BAUMÈS, CALLED THE LAW OF CALLES.

By L. MERZ.

The direct transmission of syphilis from father to child, without the infection of the mother, has for a long time been the subject of controversy among syphilographers. Those who argue against the paternal element—Notta, Charrier, Mercier, Langlebert in France, Sturgis in New York, Adam Owre in England—base their negation in those principal points: 1. The impossibility of the syphilitic inoculation of spermatic fluid. 2. The large number of observed cases of healthy children born of syphilitic fathers and 3. The difficulty a physician experiences in private practice of submitting a woman to a sufficiently careful examination. It is, practically, proven, at the present time, that the spermatic fluid, is not, as was formerly maintained, a source of contagion; and from this, to deny the influence of the syphilitic father on the fœtus is only a step . . . . As to the argument drawn from the large number of healthy children begotten of syphilitic fathers, it only proves one thing: that the transmission from father to child is neither constant nor a matter of necessity, but the fact that it is possible suffices to put on their guard the physicians whose lot it is to care for the health of the child, that they may not be lulled into a delusive security, for this possibility is really based on careful observations. As long ago as 1854, Diday had collected a large number of such cases. . . . To all of these proofs the opponents offer the same objection: the defect and the difficulty of making a sufficient examination. But this is an argument inadmissible in a serious scientific discussion, for it would mean nothing more nor less than to lay open to the charge of bad faith, well-known physicians, who when they assert that they have examined the mother fully and at the proper time, ought to be believed. The direct transmission, therefore, of syphilis from the father must be admitted, and, moreover, even before it was scientifically proved, did not the common unprofessional opinion regard it as established? Why do syphilitic men hesitate to marry? Is it only for fear of communicating the disease to their wives? Certainly not, for they know how to avoid this misfortune by abstaining from coition during the period, always short enough, in which they have contagious lesions upon the parts necessary to perform the act. But what restrains them more than anything else is the terrible fear of begetting syphilitic children, even when they themselves have not for a long time shown any signs of the disease. Thus, then, outside of its inconvenience and intrinsic dangers, syphilis entails upon man, the sad privilege of reproducing its kind.

But for this evil, if not a remedy at least a corrective, exists, and this consists in the fact that a nursing mother is never infected by her syphilitic child. This preservation, established on numerous observations of Colles, Diday, Hutchinson, Baumès, Gailletin, Kibner, etc., is at the present time regarded as absolute, and every day specialists profit by it when they prescribe, knowing that they do so in perfect security, the exclusive nursing by its mother of a syphilitic child. This precious immunity, providential as it were, preserving as it does from a terrible disease the person who is most exposed, allowing her to enjoy the inestimable advantage of nursing and giving maternal care to her unfortunate children, objects repulsive and dreadful to all who come near, is preserved in science under the name of Colles' law, the English physician who first suspected it in 1837. It is, I repeat, regarded as absolutely established, and in the rich bibliography of congenital syphilis I can find but a single exception to this law, and this was published by Zingalès in 1882.

The title of this paper indicates that it reports another exception to this law, consequently the second in my knowledge. [Here follows the history of the case which I give in brief. Father contracted syphilis at 29 years of age, married three years later, having had no outbreak for six months before marriage. Two months after marriage mucous patches in his mouth. Six or eight months later the wife became pregnant, and in nine months, having during this time shown no signs of syphilis, though repeatedly and carefully examined, was delivered. The infant had a mucous patch on his upper lip fifteen days later. Several others appeared in a few days and syphilitic pemphigus on the body, both of which disappeared in ten days. A month later a chancre developed in the areolar tissue of left breast of mother, healed in fifteen days, and was followed in a month by a fine roseola and falling out of her hair and a mucous patch in her mouth.]

I think there can be no doubt in the mind of others who read the history, as to the nature of the lesions presented by the mother and as to their significance. It is unquestionably syphilis. The roseola and alopecia establish it beyond question. It is unquestionably the nursing that communicated it to the nurse, the nature and the situation of the lesions presented by the child and mother, the period of incubation in the latter case, the impossibility of contamination by the father, as he declares, abundantly establish the fact. The title, therefore, of this paper is well deserved, it is truly an exception to the law of Baumès (or Colles).

This law, as all others that govern pathology and clinical medicine, is therefore capable of being broken, and the possibility of such exceptions seems to be important as well from a theoretical as from a practical standpoint. Theoretically we should ascertain if such exceptions have a scientific explanation, and practically, we should discover if they do not necessitate in certain cases a change in the management by the physician in charge of the nursing of syphilitic children. . . .

If the mother who gives birth to a syphilitic child can with impunity nurse it, and this is an established fact, she is preserved by the act of gestation from contamination, not only from her child but also from syphilis from any quarter. She enjoys, as it were, a kind of vaccination, and how are we to explain this vaccination except by admitting that she has been to some slight degree infected by the disease, that she has been contaminated by a certain quantity of the poison, insufficient though it be to cause visible manifestations of the disease, sufficient, nevertheless, to prevent a new infection of her system by the microbe of the disease however virulent, parasitic or otherwise? The immunity that she enjoys is therefore nothing else than a real infection of her blood by the fœtus, an infection produced doubtless by the successive inoculations of very small quantities of the poison; a mechanism analogous to that employed by physiologists in different experiments in animal vaccination, a mechanism the reverse, for instance, of that which obtains in the infection of the fœtus in the womb of a syphilitic mother. Granting this pathology, what is more rational than to conceive of different degrees in the quantity or the quality of the virus absorbed, and consequently, in the preservative power. We have in this, moreover, a simple idea more or less reasonable, a fact gleaned from experience, going to prove undoubted cases of syphilis by conception, that is to say of syphilis transmitted from the father to the mother by the fœtus [The author quotes twenty-six cases of this kind on unquestionable authority].

Syphilis by conception, is therefore proven, as is also the law of Colles, and it is also established that the syphilitic fœtus infects the maternal organism at times with an intensity sufficiently great to reproduce the disease in all its severest manifestations, at others with sufficient mildness to cause only a latent syphilitic diathesis. Suppose next that the power of this infection is diminished one or several degrees and we would have as the result an insufficient vaccination or something of the sort: and thus would be explained the exceptions to the law of Colles. It may be offered as an objection that it is difficult to understand how a mother who has for nine months resisted infection by the fœtus in her womb, contracts the disease two or three weeks later. But we must reflect on the other hand on the great difference between mediate contact such as obtains between the maternal and fœtal organisms, which communicate with each other by the circulation, and the very close contact daily and almost continuously of an excoriated breast with the specific ulcerations on the lips and mouth of a child [The author then disposes of the question of the effect of the exceptions to the law of Colles upon the nursing by the mother of her syphilitic child, and concludes that the exceptions should be kept in mind, but ought by no means to warrant bottle feeding.] In the majority of cases specific treatment should be given the mother in order to bring to bear on the infant, by the medium of the milk, the benefits of treatment. In case the mother has syphilis, we would only have to continue the treatment already instituted, insisting upon its rigor and meeting indications as they arise. It is rare, when he follows this line of practice, for the physician to obtain anything but a prompt result, and for him not to retire from the case with credit to himself and with satisfaction to all parties.

ORIGINAL ABSTRACTS.

By DR. KIRKLAND RUFFIN, Norfolk, Va.

CORPOREAL ENDOMETRITIS: ITS FREQUENCY, DIAGNOSIS AND TREATMENT. By G. ERNEST HERMAN, M.B., F.R.C.P.

The author thought this a particularly suitable subject for discussion because of the widely differing views of authors. Some consider it very rare, others think it very common. The difference is due to the fact that some refuse to admit the existence of endometritis unless the inflammation of the living membrane can be demonstrated; while others are satisfied to base their diagnosis on inference from signs and symptoms. As anatomical evidence of corporeal endometritis even pus coming from the body of the uterus is doubtful; for the secretion from the body must pass through the cervical canal and be mixed with its secretion, and, moreover, pus in the tubes may escape into the uterus. But if there be no evidence of disease of the tubes and if pus flows down into the cervical canal after it has been carefully cleansed, there is reasonable inference that the body of the uterus supplies it. If pus were absent we should look for evidence of inflammatory change in the mucous membrane of any other organ, but in the uterus neither vascularity nor infiltration of the endometrium with round cells resembling granulation tissue of other parts is evidence of endometritis, for this condition is frequently found in the endometrium of women about to menstruate who are free from any symptom of disease. Some authors refuse to class as an endometritis the condition generally known as fungous endometritis for they claim there is a multiplication of gland tissue and should be regarded as a growth and not an inflammation.

Changes in the endometrium are met together with chronic metritis, though they are also found without the symptoms of metritis. We also find in cases of fibroids a condition of the endometrium very like endometritis. Atrophic endometritis has been described but the author considers the change due to age or an imperfect formation of the decidua. He has seen cases of hæmorrhage without apparent cause and in which nothing could be scraped from the uterus, but he hesitates to class them as belonging to atrophic endometritis. The author passed by the decidual and puerperal endometritis of pregnant women and also that of women after the menopause and only spoke of that occurring independent of pregnancy and during menstrual life.

1. Fungous endometritis is not a common disease. It occurs in two forms—the hyperplastic and polypoid. In the first there is general thickening, loosening and softening of the endometrium; in the second there are distinct polypoid growths. The uterus is enlarged and the cavity expanded. The symptoms are hæmorrhage and pink or watery discharge in the intervals of hæmorrhage. The treatment, which is usually successful, is to scrape away the diseased mucous mem-

brane with the curette, and then to apply caustic. Some use only the curette, others only caustic and cure usually follows either. The author thinks to use both is more sure while in the polypoid variety the curette is the more essential. It makes little difference what caustic we use; whether nitric acid, perchloride or sulphate of iron, the actual cautery, or strong carbolic acid. Some use the sharp, others the dull curette.

Polypoid growths are most commonly, though not exclusively, met with in those cases in which the symptoms date from delivery or abortion; and treatment is more uniformly successful in these cases where there are localized outgrowths—Brennecke has tried to show that the hyperplastic form is dependent on ovarian influence, because in many of his cases the first symptom is irregular menstruation. But the author does not think mere irregular menstruation any evidence of ovarian disease. The frequency of relapse points to some cause other than the uterus. He thinks spontaneous cure is possible, for he has seen cases in which there was relapse, which refused further treatment and yet got well. As to the relation of these cases of endometritis to cancer, every one knows that there are cases in which after the uterus has been scraped and the hæmorrhage arrested, the disease returns and the patient finally dies of malignant diseases. The question, which cannot yet be solved arises, whether the disease was originally cancer or whether it had become malignant. This form of cancer has no tendency to spread to the Fallopian tube.

2. The next form of endometritis to be considered is the gonorrhœal variety. Unfortunately we know only of this form by inference for we know that gonorrhœal inflammation starts in the vagina and then affects the cervix and, later on, the Fallopian tubes; hence it must have traveled through the body of the uterus.

3. Another form, which is more often seen on the *post-mortem* table than recognized clinically, is the endometritis which sometimes occurs in the course of the specific fevers. Probably we rarely recognize it clinically, because the symptoms are so slight when compared with those of the grave diseases they complicate. *Post-mortem* research leaves no doubt as to the existence of this form of endometritis and it has long been known that amenorrhœa, menorrhagia, dysmenorrhœa, and sterility may follow these diseases. More recently abortion and placenta prævia have been traced back to an acute febrile disease.

In speaking of descriptions of acute endometritis as a disease attended with high fever and much pain, the author says that, though peritonitis following delivery or operations on the uterus sometimes commences as endometritis, it quickly extends to the tubes and peritoneum, and that he thinks that high fever and much pain are symptoms of the peritonitis and not of the endometritis.

So much for cases in which there can be no question of the existence of disease of the lining membrane of the uterus; but there are other cases in which, after exposure to causes of such a kind as we know are capable of setting up congestion and inflammation in other parts, the uterine functions become disordered and there may be slight pains and hæmorrhage with discharge in the intervals of hæmorrhage. Such symptoms may follow the use of an intra-uterine strain, excessive coition or fatigue, etc. Mere hæmorrhage is not evidence of inflammation for we may have metrostaxis just as we have epistaxis without discoverable disease of the mucous membrane. But recurrent hæmorrhage, persistent pain and leucorrhœa justify the inference that there is a persistent change. Moreover, these cases have one great feature in common with all inflammatory changes—they recover when the cause is removed. There is no evidence that this kind of endometritis ever leads to the fungous variety or to malignant disease, but the author thinks that the tendency, if left untreated, is for it to spread to the tubes, and thence to the peritoneum. Of the reflex nervous symptoms the author recognizes none except those due to anæmia for he thinks other symptoms are due to the neurotic temperament. Endometritis is generally an easily curable disease, and when uncomplicated is attended with but little pain.

There is no evidence that there is an endometritis, which is due to syphilis or struma. Tubercular endometritis is so rare that it is a pathological curiosity.

In fungous endometritis only local treatment will do good. When endometritis is due to a slight cause, remove it and lessen pelvic congestion by recumbency, laxatives, local use of glycerine, and the hot douche. In active and recent cases, instantaneous treatment is injurious ; but in more chronic cases and those in which the simple methods have failed, the curette or strong applications to the endometrium is indicated. Remedies on cotton wool wrapped around a probe do not reach the endometrium, for they are wiped off in passing through the cervix and the probe is coated by a layer of cervical mucus.

Dr. Byers (Belfast) preferred the curette, followed by the local application of iodine, to strong caustics, because he could do at one sitting with the curette what would require several if caustics were used, and it was only necessary to dilate the cervix. He thought that sterility in multiparous women was often due to gonorrhœal endometritis. Remedies to be applied to the endometrium on probes rarely reached their destination. Sterility and abortion are often due to endometritis.

Dr. C. H. F. Routh thought it easy to get at the upper part of the uterus with Simpson's instrument for applying powdered caustic. Pure pus could thus be obtained for microscopic examination. He thought that not only gonorrhœa but also simple vaginitis might lead to endometritis and pyosalpinx. Urethritis might and did sometimes exist with simple vaginitis, and in such cases the ovaries and tubes are generally inflamed and swollen. He had also seen sterility or chronic endometritis follow the vaginitis of exanthemata. Sometimes neither curette nor local applications could effect a cure. Injections were not dangerous. The diagnosis in chronic cases was not difficult if the nerve distribution were borne in mind.

Dr. Graily Hewitt said that we would have to regard the causes of uterine congestion. The most common causes were overfullness of the mucous membrane recurring month by month, general systemic feebleness of the circulation and, locally, of the uterine circulation due to displacements. Discharge from the interior of the uterus might come from the uterus itself or from the Fallopian tubes. The discharge coming from the Fallopian tubes as a rule closely followed the menstrual period, and resulted from the slow oozing of secretion, a sort of continuation of menstruation which gradually passed off, leaving the patient free perhaps for a few days. The best treatment for these cases was free drainage. The value of intra-uterine treatment depended largely on the accidental dilatation.

Mr. Pridgin Teale also thought that dilatation of the os and cervix a great factor in giving relief to these cases.

Dr. Robert Bell did not consider endometritis a rare disease or very difficult to diagnose. He thought the diagnosis could almost be made by merely the subjective symptoms. He held that salpingitis never occurred without a previous endometritis from which it spread by continuity. In treatment, the first object was to dilate the os internum, then swab out the uterine cavity, and thena pply freely some stimulating antiseptic (iodised phenol).

Dr. More Madden thought endometritis the most common disease met with by the gynecologist. It was easily cured. Dilate the uterine cavity rapidly by this form of dilation, curette the endo-uterine membrane thoroughly, apply over the denuded surface iodised phenol, support the generally hypertrophied uterus with a Hodge's pessary to take off the weights and lessen the congestion of the organ, and attend carefully to the general health.

Dr. Braithwaite thought excessive dilatation not necessary. The 16 of Hega was quite too much in single women. He used a Duke's stem to secure free drainage. Curetting should not, as a rule, be used, for it interfered with the application of caustics at the same sitting. Besides carbolic acid he used iodine, iodide of potassium, and spirits of wine, equal parts, whenever the diseased uterine cavity was enlarged.

Dr. M. Handfield-Jones spoke of the importance of recognizing the various stages of the disease when treating it. In the early stages, rest, leeching, and hot douches would probably cure; but when chronic, nothing did good but dilating the cervix, followed by scraping with the dull curette and then rubbing the bared tissue with iodised phenol. If there be a history of gonorrhœa, rod-shaped suppositories of iodoform should be passed into the uterine cavity at intervals of two or three days after dilatation.

Dr. Duke had always considered free drainage the essential point in the treatment of endometritis. In multiparæ he had generally found the cervical canal constricted as the internal os and therefore he recommended free division of the cervix and internal os. The inner os was also often found closed in pluriparæ with lacerated cer-

vix. To preserve the potency of the canal, he recommended the spiral wire stem.

Dr. Walker did not think that sufficient importance had been attached to uterine displacements in the causation of endometritis. He thought that the congestion and enlargement of the body with intrauterine discharge due to this cause, could be readily cured if treated early by replacing the uterus. In females of a nervous temperament with uterine symptoms, treatment of the general nervous condition was most successful.

Dr. M. Cameron thought that rapid dilatation of the uterine canal sometimes set up very extensive inflammation. He preferred a blunt to a sharp curette, but he had in several cases used a wire brush resembling the hair brush and intended for cleaning a feeding-bottle tube.

Dr. Horrocks said that the diagnosis of some cases of endometritis was very difficult. He divided the cases into the acute and chronic and thought the causes of each were multiple. He mentioned a case which at first was diagnosed as follicular endometritis, then considered by another gentleman as sarcoma and when removed was found to be tubercular. He thought alcohol could cause endometritis, especially in patients over 40 years of age. But he thought that the real ultimate cause was a germ of some kind. If this was the case, the germ must have a life history—birth, growth, development, reproduction, and death. With this hypothesis, we can easily understand the efficacy of so many modes of treatment. He did not think it justifiable to cut the cervix.

Dr. Herman, in conclusion, said that he thought that the great difference in opinion as to the frequency of endometritis was due to the varying amount of evidence which satisfied different persons of its existence. He thought the cases which require the curette or caustic were rare. Great pain would lead him to think that this was something more ; and amenorrhœa and no discharge would negative a diagnosis of endometritis. He thought the suggestion of the use of the wire brush a practical one, but he wouldn't use the intra-uterine stem as advised by Dr. Duke. He did not believe that uterine displacements, excepting a small minority of backward displacements, caused endometritis. The discharges in febrile diseases in children he thought were due to vulvitis and not endometritis.—*From the British Medical Journal.*

A DISCUSSION OF THE THERAPEUTICS OF TYPHOID FEVER in The Practitioners' Society of New York, Dec. 6, 1889. Dr. F. P. Kinnicutt, President, in the Chair.

Dr. George L. Peabody read the opening paper. He said that he thought the results of the treatment of typhoid fever in this country were so bad as to constitute an opprobrium to the art of medicine here. We seem to be unable to approach the low rate of mortality in several cities of Europe, and we cannot explain it by saying that we have a larger percentage of bad cases. Our high rate of mortality may also be due, in part, to the wide difference in opinion as to the best mode of treatment. The majority still cling to the expectant plan of treatment, and they do practically nothing, unless threatening symptoms set in—they believe in a simple symptomatic treatment, and very often do more harm than good. If the patient developed headache or bronchitis or had a hæmorrhage from the bowels, he was treated for these symptoms; but worst of all is the habit of giving some antipyretic drug in large doses if the temperature reached a dangerous point, thereby probably reducing the temperature suddenly and sometimes several degrees below normal. The prostration and feebleness of the heart thus produced is alarming and is then treated by stimulants.

Unfortunately those who believe in treating the disease on a more definite system, are far from being in accord as to the best method. During the past year his results in treating fifty hospital cases were very satisfactory, but this may not have been due entirely to the treatment.

He had made a systematic trial of the treatment by antiseptics and had given resorcin and beta-naphthol coated with keratine. The routine method was to give ten grains of calomel when the patient first entered the hospital, to be followed at regular intervals by doses of one or the other of these antiseptics, to be continued until the temperature dropped and remained at normal. The Ehrlich's reaction usually disappeared after the first few doses, though it promptly reappeared if the drug was stopped in the pyretic period. He had had in a few patients blood, albumen, and casts in the urine as a consequence of giving beta-napthal; but resorcin had produced no bad symptoms. Both drugs equally seemed to have a marked effect upon the temperature and duration of the disease. Of twenty-seven cases so treated, five died, but of these one had been under treatment only one day, two only two days, and a fourth only six days. Death was due to extensive ulceration of the colon in one case, to profuse hæmorrhage in another, to lobar-pneumonia in one, and to parenchymatous nephritis in two (these latter two had been treated by beta-naphthol and resorcin, respectively, for one and six days. The temperature usually ranged between 100° and 102°F. Milk was the chief, and usually, the only food.

But the author did not think that this method of treatment compared with the antipyretic method of treatment with cold water applied to the surface of the body. The statistics of Brandt made a remarkably good showing for this treatment. He had tried to accomplish the principle of Brandt without using the cold bath. The cold full-bath caused too much depression in many of his hospital cases, which had been ill-fed and intemperate and had not come under observation until late in the disease. Accordingly in these patients he kept the temperature below 102°F. by the use of the cold pack, to be repeated as often as necessary. When the cold pack was not capable of reducing the temperature he gave small doses, often repeated, if necessary, of antipyretic drugs in addition. He rarely used the cold pack oftener than four or five times a day. Eleven cases so treated in Bellevue Hospital had all recovered. All were adults and most of them unfavorable cases to work on.

Dr. J. West Roosevelt said that he strongly believed in and praçticed the symptomatic or rational treatment. Each symptom should be met, but methods which had been shown to be injurious, should not be persisted in. Antiseptics, as now defined, should not be used. Indeed, Dr. Peabody had called attention to the fact that beta-naphthol was actively poisonous. As a rational man he disapproved of useless drugs, as gallic acid in hæmorrhage and antiseptics, and of all antipyretic measures if good did not follow immediately. He thought that the large number of early recoveries in Brandt's statistics threw doubt on the diagnosis, and also the statement that none died who came under treatment before the fifth day. He thought it difficult to make the diagnosis before the fifth day. It seemed to him in studying the statistics of typhoid fever that the death-rate had not changed much in the last forty or fifty years, but unfortunately statistical tables full enough to settle such points are hard to find. But we should not look at masses and forget individuals in treatment. The prognosis depended on the symptoms and not on the death-rate according to statistics.

As to treatment by antiseptics we had proof of their doing harm, but none that they reached the source of the disease and did good. We could not speak so positively as to the cold water treatment. He thinks that we classify our cases more severely than they do abroad, and that this may account for the higher death-rate. The guide in the cold water treatment is simple—if followed by good results, and not by bad, it might be repeated with advantage. But temperature in itself is not necessarily dangerous, if the general condition is good. If high temperature alone produced the parenchymatous changes, it would do so alike in the child and adult, but we know that children often have high temperature with no bad symptoms. Either the fever heat injured the tissues, or was the direct product of increased tissue changes, or the increased temperature was not dangerous. If the first, cold would surely prevent death and it does not. If the second, since the number of heat units seems to be unchanged by cold bathing, we can hardly think that the tissue-change is diminished. He had seen both the cold pack and cold bath (as well as antipyrine and other antipyretics) do good, but we must find another explanation. In the rational treatment we must now consider the pulse, respiration and general condition; and not simply the reduction of temperature, but whether the patient's condition was improved, was the test of the value of a therapeutic measure.

Dr. Beverley Robinson said that he was disposed to agree with Dr. Roosevelt. But he thought that the external application of cold did more than cause a reduction of the temperature; it stimulated the nervous system, which resulted in the reduction of fever and improved circulation, nutrition, etc.—a result which did not follow antipyretic drugs. He thought it a great mistake to bring these data from Germany and apply them to the United States. Personally, he was opposed to the cold bath for high temperature, and he had seen bad results follow it in scarlet fever. But in typhoid fever, with high temperature, he thought the cold pack or affusion very often useful; but in some cases it did harm, as shown by impaired circulation, though some authorities do not regard this symptom as harmful. He thought that high temperature alone did not necessarily cause degeneration of muscular tissue; but high temperature is generally accompanied with other severe symptoms and signs. It had not been shown that structural changes were the cause of death, and he thought that nerve-depression was the main factor. He did not know whether intestinal antisepsis was a good method or not, but it could be used rationally to prevent the formation of ptomaines.

Dr. C. L. Dana agreed heartily with Dr. Peabody. He thought our results not what they should be. He had carried out the intestinal antisepsis plan of treatment, for he thought it the only rational treatment except the application of cold. He thought the cases ran a milder course, but he did not think it very efficient. The object of the cold bath was not so much to lower the temperature as to stimulate the nervous system, and he disagreed with Dr. Roosevelt as to the inability of the cold bath to lessen heat production. He did not think the cold pack would stimulate, but would have a tendency to depress.

Dr. A. A. Smith though the important question was, What was the relation of the temperature of typhoid fever to the essentially diseased condition of the patients? The essential disease preceded the temperature, but did high temperature aggravate the action of the poison or increase its production? If it did not, it seemed irrational to attack the temperature. He thought we had two poisons in typhoid fever: (1) the original poison caused by the bacilli; (2) simple sepsis from the decomposition in the intestinal tract. The stools of typhoid fever are often highly putrid, and he had noticed that they were nearly always associated with high temperature. It seemed to him to indicate the necessity of intestinal antisepsis as far as possible, and he thought we should pay much attention to the condition of the bowel, so far as it was accessible from the anus. Temperature is not a reliable indication of the amount of trouble going on in the system. He thought the cold bath and other antipyretic methods often did good also by allaying nervous symptoms. To apply cold he was much pleased with a wet towel applied to the anterior portion of the body. Cold sponging also reduced the temperature. Regarding statistics, he thought the ambulance service a disturbing element, for they constantly brought into hospitals patients given up by the doctors outside to die. He thought the bowel should be washed out in both diarrhœal and constipated cases.

The President thought we could only estimate the value of

Brandt's method by statistics. The death-rate following the expectant plan of treatment was very high. He agreed with Dr. Smith in regard to the efficiency of intestinal antisepsis. He thought the disappearance of Ehrlich's reaction after the use of antiseptics might be explained by chemical interference due to such drugs in the urine. Typhoid stools should be more carefully disinfected, and Appelmann had found, after a series of experiments, that solutions of equal amounts of sulphuric or hydrochloric acid and water, or of acidulated corrosive sublimate, were the most effective.

Dr. Peabody thought that the value of Brandt's method had been proven, for the mortality had only been eight per cent. in a collection of over nineteen thousand cases. In another series of five thousand cases, in which the treatment had been carefully carried out, the mortality was under four per cent. He had used antiseptics in order to render the intestinal cause as aseptic as possible; he had not even thought of whether or no the bacilli were destroyed. He had almost uniformly failed to reduce temperature by cold sponging. He had no doubt but that the average case in Germany reached the hospital in a better condition than in this country. Brandt's method was in general use in the German army, and after a thorough trial in the Second Corps it was found that the mortality was much less than in the others. —*From the Medical Record.*

THE USE OF MENTHOL IN DISEASES OF THE UPPER AIR-PASSAGES.

By Frank Hamilton Potter, M.D.—*From the Journal of the American Medical Association.*

The author bases his paper on the use of menthol after four years' experience with it. Menthol has generally been used by itself, and not combined with other drugs. It has been simply dissolved in an oil in strength from one to forty per cent. He prefers *oleum petrolina* as the menstruum. He has used it by means of vaporization and inhalation, or applied it by means of an application well wrapped with cotton, or by an atomizer. It may be dissolved in *oleum petrolina* up to a strength of fifty per cent. Those above twenty-five per cent. have been used by inhalation, and those below by direct application.

Too strong a solution causes great pain, and especially is this the case with the nose, to which he has never been able to apply without cocaine, a stronger solution than one or two per cent., except in atrophic conditions. In the pharynx, mouth and larynx much stronger applications can be used. It produces a pleasant, cooling sensation, and is analgesic to some extent, and therefore the second application can be made stronger. If used too strong, some patients describe the character of the sensation as intense heat, and others as intense cold.

In acute diseases of the nose it does not seem to be of any benefit, but in the rare cases of simple chronic rhinitis, without hypertrophy or deformity, it yielded much better results. After operations in the nasal cavity, when a mild antiseptic is needed, menthol acts nicely. No toxic symptoms had been apparent. After operation the parts were cleaned and menthol applied, by means of the spray, in as strong a solution as could be borne. There was remarkable freedom from the mild sepsis so commonly following such operations.

Menthol has a place in the treatment of atrophic rhinitis. It cannot supplant other methods, but it can assist. After cleansing the parts, a solution that can just be felt is thoroughly applied. Sometimes it can be borne as strong as thirty-five per cent., but after a few days the parts become more sensitive and benefit takes place, and the dryness, odor and accumulation of hardened mucus are partially relieved. This strong solution is gradually decreased, until in a few weeks it reaches five per cent.

The author does not know whether this improvement is permanent or not.

In the pharynx and mouth the results have been more satisfactory. It has been useful in both acute and chronic cases. If applied early in strong solution in ordinary sore throat, the attack will be lessened in duration and severity.

After careful consideration, he formulated the following general rule :

When chronic inflammation follows an acute attack, and the air-passages above and below the pharynx are not diseased, the relief from the treatment is permanent; associated with nasal or laryngeal disease, the relief is partial and temporary.

About the same results are obtained in acute and sub-acute laryngitis.

In tubercular laryngitis, five cases thus treated gave very encouraging results.

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SELECTIONS.

CLINICAL LECTURE ON THE PRESENT STAGE OF SURGICAL TREATMENT OF TUBERCULAR DISEASE OF JOINTS. Delivered at St. Thomas's Hospital, Jan. 14, 1890, BY John Croft, F. R. C. S., Surgeon to the Hospital.

Gentlemen :—As this is one of the subjects under discussion and consideration at this period of the progress of surgery, I have ventured to put together a few observations for your guidance in the study of the question. You will find that I am made to dwell more on disease of the hip-joint than upon any other articulation. The dispute and war which have been going on have been raging chiefly around that joint. You will not wonder at my giving that joint almost exclusive place in my remarks when you remember that the surgery of that particular joint has occupied a great deal of my own attention. When I became surgeon to this hospital, in 1871, the surgical treatment of hip-joint disease was in a most deplorable condition. The pathology of the diseases incidental to joints has advanced since that period so far that surgeons have no longer an excuse for empirically treating disease of the hip-joint, but may commence and pursue a definite principle or policy in their management of the case in hand. Eighteen years ago the differentiation between what was then called scrofula and bacillary tuberculosis had not been established. Men's minds, except in a few remarkably advanced instances, were in doubt and confusion. After Koch, in 1882, showed how baccilli were always to be found in "tubercle" opinions with regard to scrofulous and tuberculous diseases took more definite shape, and with this knowledge a more definite line has been taken in the surgical treatment of joint diseases. At the present period the surgical party may be said to be pursuing two opposite lines of policy. One section has laid down a formulated policy of attempting complete removal or excision, founded on the certain knowledge of the presence and habits of an inoculable growth. Another section follows a contrary line of policy—that of treating the same disease without excision or similar radical operation, and in these modern days explains the old practice by recently acquired knowledge. Is the first mentioned section right, and the second one wrong; or is the second section right and the radical party wrong; or are both more or less right? The facts on which the operationist party base their policy are something like these: that when tubercular disease commences in joint structures it follows the same course that it does in other structures of the body; that it may cease to develop, and then may undergo spontaneous cure; that it may develop and undergo caseous degeneration, and the caseous products may liquefy and give rise to abscess; that the local condition may be followed by infection of other parts of the body; that the tubercular element is artificially inoculable, and is auto-inoculable, and this latter kind of infection may suddenly take place upon a long period of local quiescence. The line of action which has been taken on this basis of facts has been in the direction of what had been called early excision, and the latest development of this prompt action has been thus formulated by Mr A Barker:* "That in cases where general tubercular disease does not contraindicate it, the infected tissue of a joint should be thoroughly removed so soon as it is suspected that caseation is advancing in it." When other treatment has failed to arrest the disease of the joint, and there are signs that caseation has commenced and is advancing, then the operation of excision should be performed. The operation should go wide of the disease and proceed with as little violence as possible, and with the object of obtaining primary union or union by first intention.

Now this latest stage in practice has been reached by painful and laborious steps during the last forty years or more. Then the operation of excision was performed as a last resort to save a limb or a life. When I took up the subject nearly, twenty years ago, excision of the hip-joint was rarely performed, and then at the latest stage of the malady. After the experience of a few cases I became convinced that the proper time for operating, if operation was to be done at all, was a comparatively early one. By comparatively early I meant early when the period was compared with that at which my predecessors and teachers had performed it. The term "early" was much criticised and commented upon. I think it was misunderstood. The next stage commenced and advanced with the introduction of antiseptics and the discovery of the bacillus tuberculosis. The culmination of this stage was reached when certain surgeons succeeded in obtaining union by first intention after complete and wide excision of diseased joint tissues.

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*Lectures at the Royal College of Surgeons, 1888.

Now, let us see what are the facts upon which the anti-excisionists, as represented by Mr. Howard Marsh, base their policy and practice. At the present time this section of the surgical party admits that the disease which used to be called scrofulous is tubercular in its character, and it recognizes the parasitic nature of tubercle. So far the basal facts are the same. From clinical observation of the progress of joint disease and of the results of non-operative treatment in the past, and by comparing the progress and results with the achievements of the excision party, a verdict is deduced against the excisionists. First, with reference to the progress of tubercular disease from clinical observation of it. It is alleged that the tubercular condition is a transitory one. That the condition of a patient favorable to the development and growth of the tubercular element is a transitory one. If the patient is brought into a condition unfavorable to the growth of tubercle, a cure may result with a movable joint, providing the treatment has been commenced sufficiently early.

It is maintained that the bacillus tuberculosis is dependent for its vitality and maintenance upon conditions and influences which are either in their nature transitory or such as can be counteracted or removed; and when these conditions are no longer present the bacillus perishes, and the tubercular process comes to an end. The tubercle and its products become a mere "corpus mortuum," and either is gradually removed by disintegration and absorption, or gives rise to an abscess, "and is clean swept away." Further, it is maintained that the risk of general infection is so small that it cannot be regarded as affording any substantial support to early excision, This opinion is based upon some statistics drawn from reports on cases of excision and from statistics derived from the Hospital for Hip-joint Disease. I shall have occasion presently to criticise these statistics. Another allegation is that the excisionist cannot ensure that in his operation no tubercle has been left behind, and that he cannot be sure that there is no deposit elsewhere from which infection may yet occur. A yet graver objection is made by this party against excision—viz., that the operation may precipitate the result of general acute infection which the same operation was intended to prevent. It is denied that before the recently recorded cases of primary union and healing of wounds after excision there was any proof that the average duration of illness was diminished by excision, particularly in the case of the hip-joint. This denial is not well and fully supported, as I shall hope to be able to show you. By comparing certain cases treated in the Hospital for Hip-joint disease without operation with recorded excision cases, objection is taken to the results of excision in another respect. It is alleged that the average amount of shortening of the limb after operation is greater than in cases treated without excision, especially as regards the hip-joint. The frequent (60 per cent.) presence of sequestra of dead bone, as revealed by excisions and museum specimens, was first pointed out by me and brought forward by me as a reason for opening and excising joints, particularly the hip-joint. Mr. Marsh, in his examination of this fact, denies the frequency of of necrosis, and supports his denial by a reference to the experience of the Hospital for Hip-joint Disease. Because the cases under observation and not operated on at that hospital have not yielded sequestra of dead bone he doubts their existence, or thinks they must have been disintegrated or removed in the discharges.

We now come to the objection raised to excision on the ground of the rate of mortality. It is alleged that the mortality amongst patients treated by means other than operation is very decidedly lower than that amongst patients who are subjected to excision; but you must observe that this question of mortality is limited to excision of the hip-joint. Minor objections remain to be referred to, but I do not propose to extend my remarks to them. So far as I have gone I have summarized the relative positions of the two parties into which the surgical camp is divided.

I now propose to discuss *seriatim* the objections that are maintained against excision, under the following heads:—mortality, necrosis, shortening, duration of illness, risk of and precipitation of general infection, incomplete ablation of disease, transitory character of tubercular tendency.

1. *Mortality.*—Mr. Marsh, who was the exponent of the anti-excision party and lecturer on this subject at the Royal College of Surgeons in July, 1889, stated that the mortality at the Hospital for Hip-joint disease might be put down as well under 10 per cent. Now, examining the data on which this statement is made I find that there were 614 cases discharged from his hospital since the early part of 1880; written to, 160; incurable, 13; amputated, 4; dead, 35—212, making a total of 614 inclusive of the 402 not accounted for. Of this total of 614 cases, the large number of 402 has been untraced. Notwithstanding this the percentage of deaths has been calculated. Thirty-five patients were known to be dead. The rate is given at 6 per cent. The author says that "allowing a wide margin for cases that may have ended fatally since they were lost sight of, although when last seen they were doing well, it may be safely said to be well under 10 per cent."

Now, let us compare this rate with the mortality-rate given from the same hospital by the same authority on the number of patients admitted from 1867 up to the end of 1879; 277 cases are given, including 96 deaths, but about this total of 277 I must point out that 59 were untraced cases; nevertheless the rate of mortality is calculatted on the 277 at the rate of 34.3 per cent. By excluding deaths not attributable to disease and the deaths due to operations the rate was reduced to 30.4 per cent. The same report made out that the mortality after excision of the hip-joint was at the rate of 40 per cent., and by excluding cases of deaths in which the joint affection had been cured the rate was reduced to 35.5 per cent. This rate is of course unfavorably compared with 30.4 per cent., the rate claimed under similar deductions for the opposite side. The list of excisions that yielded a mortality of 40 per cent, included cases of old neglected disease such as are rarely seen now. This I know, as the cases were my own.

I do not think I am unfair when I point out that the total on which the opposite side had calculated their rate included 59 cases whose after histories had not been traced.

With regard to the more recent statistics and death rate reckoned at 10 per cent., it must be quite apparent that this rate is put too low. Improvement has taken place on both sides—on the side of the excisionists and on the opposite side.

Since 1879 I have operated on 56 cases. This total shows a mortality of 12.6 per cent.; of these deaths, 7 in number, 2 only were attributable to the operation.

This second group shows: Cures, 33; under treatment, 12; untraced, 4; deaths, 7; total, 56. Mortality reckoned at 12.6 per cent.; when untraced cases allowed for, at 13.6 per cent.

Take now Mr. Wright's results. On his 100 cases it has been calculated by the anti-operationists that the rate is 20 per cent. If the rate were calculated on deaths due to the operation, and therefore to preventable diseases, the rate would become much lowered, and the rates of the two opponents become more approximated. Nevertheless, after all deductions have been made on both sides, it must be admitted that up to the present time the rate of mortality is slightly in favor of the anti-excisionists. Whether it will long remain with them, the future, and a comparatively near future, will disclose. Improved methods of operating, combined with better conditions under which operations are undertaken, may be confidently expected to bring the two rates nearly or quite level, and then the advantages claimed by the operationists will be better realized. In ten years the rate of mortality calculated for the operationists has been reduced from 40 to 20 per cent., or lower, if my statistics are considered—viz., between 12.6 and 14 per cent. The opposite side claim to have reduced their mortality from 30.4 per cent. to 10 per cent., but this I cannot allow, as I have already pointed out that of the total of 614 cases quoted by Mr. Howard Marsh, there is the large sum of 402 unaccounted for.

2. *Necrosis.*—Our knowledge of the frequency of sequestra in the

hip, as our knowledge of the pathology and morbid anatomy of hip-joint disease, has been obtained, in large measure, from the excisionist party, and not from the hospital for Hip-joint Disease. The Committee of the Clinical Society on Hip-joint Disease, in the report already quoted, found that necrosis occurred in nearly 60 per cent. of the specimens examined. That is an absolute fact. The sequestra were seen. Notwithstanding this, Mr. Howard Marsh expressed an opinion, in his lectures at the Royal College of Surgeons, that in his own experience sequestra are rarely produced, or they are so soft and friable that they readily disintegrate and are discharged. This is stated notwithstanding the fact that, in the first report of 277 cases of disease of hip-joint attended by suppuration, there were 192 cases returned *not* cured and 87 deaths, and of the 192 59 had not been "traced;" that means that the course, after leaving hospital, could not be traced in 59 cases. In his second report of cases at the Hospital for Hip-joint Disease he gives a total of 614 cases. Of these 402 could not be traced. Deductions from 37 cases not intentionally selected, but practically best cases (as they were able to attend for examination), cannot be taken as conclusive on this question of necrosis. When the statistics of shortening after cure of cases of hip-joint disease attended by abscesses are examined, a very interesting fact comes out—viz., that the shortening often amounts to three or more inches. These cases *suggest* necrosis of femur, though there is no proof that they were so. Reference to any museum or to cases operated on will yield instances of large and small sequestra so blocked in as to require measures to remove them. I cannot admit that necrosis is infrequent or that sequestra are always so friable and soft as to readily disintegrate and be discharged. I have always maintained that the possibility of the occurrence of necrosis is a reason for excision, and I remain of the same opinion.

3. *Shortening.*—I do not pretend to say that *past* statistics of excisions compare favorably with the statistics of well-cured cases of hip-joint disease without operation. After excision as it had been practised until lately, there was sure to be considerable shortening, but after cure without operation the amount of shortening, was uncertain. It might be trifling or it might amount to three inches or more*. Improved methods of operating tend to lessen the amount of shortening after excision, and therewith this objection to operation will gradually dwindle away. Mr. Wright informs us that in 100 cases of excision the average amount of shortening was 1½ inches. In some the loss of length amounted to only ¼ in. The average shortening in cases of suppuration recently treated at the Hospital for Hip-joint Disease in given as 1 in., but the measurements given ranged from *nil* to 2 in., or over.

4. *Duration of Illness after Operation.*—We come now to a most important point in my estimation—viz., the duration of illness after operation, or time and suffering saved by excision. In his lectures,

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*See Clinical Society's Reports.

given at the Royal College of Surgeons, Mr. Howard Marsh states that "the average duration of the thirty-seven cases of suppuration, up to the time at which all symptoms of disease disappeared and the children were walking freely on the limb and without crutches—that is, until they were finally cured—was a little under *five* years." Now we turn back to the Clinical Society's reports (1881) on my first forty-five cases of excision. The average total duration of illness in fourteen cases of verified cure was three years. Here we have a distinct gain of two years. But this does not express the full value of the gain. In some cases the duration of illness after operation was reduced to a few months. Since 1880 the results of operations have been much more favorable. As I have already stated, I have operated on fifty-six cases since 1879. Of that number twenty-seven were known to be cured within two years, and of these one was cured in one month, and eight cured under one year. I may remind you of the cases reported by Mr. Barker and others who can boast of a little group of cases cured by operation resulting in union by first intention, and this obtained by the minimum amount of shortening. In this most important matter of saving time and suffering in child life, the excisionists have obtained a decided advantage over the opposite side. Though I admit that the rate of mortality up to recent times has been slightly in favor of the anti-excisionists, I can claim a verdict on the question of duration of illness and suffering decidedly in favor of the excisionist party.

5. *Risk of General Infection and Risk of Precipitation of General Infection.*—This risk does not belong exclusively to the excisionist side, though it must be admitted that the risk has been less on the side of those who advocate treatment without operation. The latter party make use of the risk referred to as a reason for avoiding operations. On the other hand, the modern excisionist uses the reason on behalf of early excision. He advocates the performance of the operation at a stage before the risky period has arrived. The modern excisionist deprecates operations in advanced cases, and advises it so soon as caseation has commenced and is advancing. He recognizes the risk, and he does his best to avoid it by (1) operating early; (2) by cutting wide of the diseased tissues; and (3) by obtaining union of the cut surfaces by first intention.

The apostle of the old method of treatment takes advantage of the admission made by the modern pathologist and excisionist, and condemns the latter, Mr. Barker, out of his own mouth; but the only support to his views which he can derive from his own side is his belief that systemic infection from the joints under the non-operative plan is comparatively rare. He refers to the Clinical Society's Reports in 1880. In 260 suppurating cases there had been at the time of the report sixteen deaths from tubercular meningitis. This is interpreted into a mortality at the rate of 6.15 per cent. from acute general tuberculosis. From these and other figures Mr. Howard Marsh states in his lecture that although the possibility of general infection from a tubercular joint is a distinct element of danger, the risk is so small that it cannot be regarded as affording any substantial support to the practice of early excision. If the risk on each side is not considered a grave one from the numerical point of view, then I think the credit belongs to the side who would abolish the risk of early extirpation of the infective element.

Two other subjects remain to be touched upon—viz., complete ablation of disease, and the transitory character of the tubercular tendency. The first I would dismiss in a few words. A theoretically good operation is not to be condemned because there is a risk that some surgeon will not perform it thoroughly. The surgeon is advised by excisionists against an attempt to extirpate a disease which is already widespread and advanced. A complete removal of the diseased tissue is insisted upon, and precautions have been urged against incomplete operations.

On the transitory character of the tubercular tendency there is no room for dispute. It is put forward as an inducement to abstain from operating and as a reason for attempting to cure hip-joint disease of the tubercular kind by other means than the knife. The excisionist thinks that a child belonging to poor parents, in densely thronged cities, when he has arrived at a certain age of tubercular joint disease, should be relieved as quickly and completely as posssble. It is thought that the time has come when the risk of the disease proving the opposite of a transitory one should be promptly met, and, at the same time, that the sufferings of the child should be cut short, and that the duration of illness should be abridged as much as possible, and I look upon that as a sound reason.

Now, I have briefly put before you the policy and practice of the two extreme sections into which the surgical camp has been divided on this subject. It remains for me to notice a third section. This section has sprung into existence during the last seven or eight years. It is a subdivision of the operationist section. They who belong to it call themselves the arthrectomists or erasionists. They hold the same opinions as the excisionists, but the operation advised by them differs not in theory, but in degree. One objection to excision as practised on joints generally, up to 1880, and already referred to, was the mutilation and shortening which followed on the operation. In order to avoid this condition of the limb, the operation of erasion or scraping is employed. The tubercular or diseased synovial membrane is scraped and dissected away, the diseased bone is similarly treated, and the procedure is only deemed complete when all diseased tissues have been removed. In this way the removal of the disease may occasionally be accomplished without the loss of any bone. After such an operation a movable joint, and a limb free from shortening, may under favorable conditions be obtained. In the event of bone being diseased the results of the operation are not likely to be so successful; yet, providing all tubercular bone has been removed, the result may be better than after an excision which touched or included the epiphyses themselves. The fault or shortcoming of the erasionists lies in this, tubercular disease situated at the epiphysial lines may escape them. Growth and development of tubercle in this situation are not by any means rare; indeed I believe them to be more common than anti-excisionists and many other surgeons are aware of. I speak from the results of examinations of many specimens by myself and others. For patients suffering from tubercular disease limited to synovial membrane, erasion is admirably well adapted, as it meets all the requirements of the case when performed early. In advanced cases and in cases of more widespread disease, a more radical treatment is called for. In instances of intermediate character and degree excellent results seem to have been obtained by complete erasion, but this does not apply to disease of the hip-joint. Meantime, to my mind, it offers better prospects for saving life, preserving useful joints, diminishing shortening, and cutting short the duration of illness and suffering than either the policy and practice of the anti-excisionists, or the practice of that section from which it has emanated. It is a noteworthy fact that in Mr. Howard Marsh's lectures against excisionists there is no place accorded to the erasionist party. It is conspicuous for its absence. There may be more than one good reason for this. Erasion has not been considered hitherto to be applicable to tubercular disease in the hip-joint, and Mr. Marsh's criticisms are almost entirely confined to the disease as seen in that joint. On this account the practice may have been omitted from his notice.

In conclusion, gentlemen, I would say of the present state of surgery of joints for tubercular disease, that it is taking the opposite of retrograde steps, that it is advancing on safe lines, and that there is a great future for the policy which has laid down that tubercular disease in its caseating and liquefying stage should be completely excised, and for the practice which provides an operation that shall effect this object in such a manner as to save the duration of suffering and illness, and yet preserve a useful joint and non-mutilated limb.

INFLAMMATORY DISEASES OF THE UTERINE APPENDAGES.* By Francis Imlach, M.D. Liverpool.

In a previous paper upon ovarian abscess and pyosalpinx (*Liverpool Med.-Chir. Jour.*, Jan. 1886), the pathology of all the forms of inflammatory disease of the uterine appendages with which I had any practical acquaintance was introduced to your notice. I had already shown, both here and elsewhere, numerous morbid specimens which had been removed by surgical treatment, and exhibited women who had benefited by that treatment. It was upon Jannary 1, 1884, that I first ventured to remove the uterine appendages of a woman who was suffering from pyosalpinx, and my paper, at the end of 1885, was based upon forty-one cases of ovarian abscess and pyosalpinx, which I had similarly treated. But I also illustrated at considerable length the various inflammatory conditions of the ovaries and tubes. These

* Read at the Liverpool Medical Institution, Dec. 5, 1889.

were, for the most part, of a chronic nature, and the fundamental importance of their pathology was not then fully recognized. Although Bernutz had industriously shown, by many years' pathological work, that the ovaries, and more especially the Fallopian tubes, are the seat of the graver inflammatory diseases that so often beset the female reproductive organs, his conclusions were only theoretically accepted; and these diseases were habitually mistaken for inflammation of the uterus and of the pelvic peritoneum and cellular tissues. So long as the treatment by rest, tonics, blisters, etc., remained unaltered only a mild interest attached to the new nomenclature. But from 1880 gradually, and from 1883 more frequently, removal of the diseased structures became, when the pain and ill-health of the patients were sufficient to induce them to accept it, a recognized method of treatment. And as it grew clearer that this new method was based upon sound surgical principles, and time showed that the relief was permanent, it advanced in favor despite much hostility. It is now taught in the most influential teaching centres, and is practiced in nearly all the large towns. The whole subject is fully dealt with in Mr. Lawson Tait's able work upon Diseases of Women.

My present object is to set forth as practicably as possible the various classes of cases which are likely to be benefited by this treatment. And I must premise that I advocate it most earnestly for women whose circumstances require them to earn their own livelihood, or at least, to lead an active life. Those who can have unlimited rest or change, and for whom life is made easy, will naturally defer any operation until the symptoms alarm them; and those who are content with gin and morphia and chloral to the end will require none. I shall not waste time in lengthy discussion of alternative or preliminary treatment, but shall assume that the hot douche, where it appeared indicated, has been vainly tried, and that tonics, purgatives, ecbolics, etc., have proved useless.

My pathological experience is not largely based upon *post-mortem* examinations, but chiefly upon morbid specimens removed during the life of the patient for the purpose of relieving her of disabling pelvic pains or menorrhagia. Pathologists have been slow to recognize the vital importance which Bernutz first ascribed to these lesions, and which gynæcologists now admit. Dr. Dreschfeld, of Manchester, has described several cases of fatal peritonitis due to the bursting of a minute ovarian abscess, which might easily have been overlooked. Indeed, in such cases of fatal peritonitis, it must often be quite impossible to determine the organ from which the inflammation spread. When, upon the other hand, a woman who has had pelvic trouble all her days dies of some other disease, the adhesions, thickenings, and dilatations or atrophy of her ovaries and tubes are easily overlooked; indeed, they are only described in the more recent text-books of pathology, and only found by those who look for them.

Without entering into its details, I shall endeavor to employ this new pathology, which has so greatly transfigured gynæcology, as the link by which the previous history of patients, the diagnosis of their state, and their health after operative treatment are kept together. Since January 1, 1884, about 210 patients have been submitted by me to surgical treatment for various inflammatory diseases of the uterine appendages, though, as I shall subsequently explain, these structures have not in all cases been removed. It is difficult to present briefly a true estimate of the relief of suffering and the prolongation of life which has followed my adoption of this treatment. Unfortunately I have not a census of health taken upon a single day to offer you. But I have caused all my former patients, whose addresses could be found, in number 142, to be visited by trained nurses, who were sufficiently familiar with the subject to be able to obtain an intelligent report. Two of these nurses were formerly staff-nurses at the Shaw Street Hospital; two others, of whom one was the widow of a medical man, were surgical nurses whose services were specially devoted to this quest for three months; and the other was a well-known district nurse. This inquiry, which has been carried out irregularly during the past twelve months, has given very favorable results, and has amply confirmed the opinion expressed in my former paper. It may still be a question with a patient whether she would not rather suffer pain and the disabled life which attends it rather than face an operation, but there need no longer be any question as to the reality of the relief offered. It not unfrequently happens that a patient who contemplates the proposed operation asks to see some one who was in like plight with herself, and can bear witness to the benefit of the operation, and I seldom fail to supply her with several parallel cases. And this I find by far the most effective way to meet hostility. The inquiries of the nurses were chiefly directed to the ultimate effect of the operation upon menstruation, to the general health, and to what I term the good-will of the patients; and these I shall summarize.

CHRONIC OVARITIS AND SALPINGITIS.

This is a large class, and, indeed, might be made to include the whole series; but, by custom, purulent ovaries and tubes and distended tubes or cystic ovaries are excluded. The included varieties of inflammatory disease are numerous. There are the large pale ovaries following typhus and other fevers, which are tough on section, composed almost entirely of fibrous tissue, and without any trace of Graafian follicles. There are the corrugated atrophic ovaries, which may be reduced to the size of dried peas; and, I think, ovaries with minor watery cysts are generally included in this category. The tubes are thickened and distorted, but without fluid contents except a little mucopus. Sometimes they feel as if beads had been thrust into them, and on section these beads are found to consist of inspissated pus and mucous epithelium. But the adhesions of these organs are also to be noted. They may be crowded into Douglas' space, where they are held down by peritoneal adhesions and a retroflected uterus, or they may be adherent to one side or other of the uterus or to its fundus, or to the cæcum, vermiform apendix, or rectum. It is against operative interference in these cases that objection has been chiefly made. It is said that one cannot be sure that the patient is sterile, and that the disease is not dangerous to life; and it is lightly said that the women are in reality only anæmic or hysterical. Now, I am quite ready to admit that all atrophic ovaries are not sterile. In August, 1885, I drained the peritoneal cavity and stitched one of two very atrophied and prolapsed ovaries to its broad ligament. The lady had been twice married, but was without children, and her illness had confined her almost entirely to her couch for years. The operation relieved her of all pain, and she has since had two children under the care of Dr. Steeves.

But in this case the tubes were healthy. In general, however, the tubes are found to be occluded, and there is absolute sterility. It was for cases of ovaritis without salpingitis that I devised the operation of oöphorraphy, or stitching the ovary at its hilum to the infundibulo-pelvic ligament, and by carefully selecting my cases, I got good results in a fair proportion of the seventeen cases in which I tried it. But in two cases the pain returned to such an extent that I was obliged subsequently to remove the ovaries, and became thereby convinced that the bursting of Graafian follicles, through the toughened and thickened capsule of a diseased ovary, may be attended with great pain. I now think oöphorraphy should be restricted to the cases of simple prolapse and hypertrophy which may appear to require surgical interference.

Hysteria need be no cause of confusion. It is rarely found in women with diseased ovaries, and is not likely to be cured by their removal. No doubt Battey hoped to cure certain mental states in young women by removal of their uterine appendages, but this hope was not fulfilled. In the case of a patient from whom I removed two enormously distended tubes, I stated at the North Wales branch meeting (*Brit. Med. Jour.*, 1888, p. 740), that epileptic attacks, to which she had been subject for twenty years, had ceased since the operation, but I have now sorrowfully to add that the attacks recurred within six months. Pelvic and reflected pains, inability to work or walk, vomiting, menstrual irregularities, and dysmenorrhœa—these are the symptoms of ovaritis and salpingitis which can be cured by removal of the diseased structures.

Here is a letter from a slate quarryman, for whose wife I removed a pair of ovaries, each no bigger than a dried pea, and small thickened tubes:—

5 ARTHUR TERRACE PENMACHNO,
via BETTWSYCOED, *26th March*, 1889.

DR. IMLACH: Dear Sir: I take this opportunity of writing, to inform you of the great benefit my wife has received from the operation you performed on her at Penmachno on the 1st October, 1887.

Previous to that she was constantly suffering from severe pain and unable to do almost anything—in fact, always an invalid. Several doctors had been in attendance upon her from time to time, but nothing that they gave her seemed to do her much good. At last, at the suggestion of Dr. Williams, Penmachno, she consulted you, and you kindly consented to come down all the way to Penmachno and perform the operation upon her. Both her and myself are quite incapable of expressing our gratitude to you, because you have given to my wife a new lease of life, and rendered our home happy. Dr. Williams informs me that the operation which you performed upon her in his presence and in the presence of Dr. Evans, Llanrwst, was the removal of her uterine appendages.

Kindly accept our united gratitude, and may you long live to bestow such benefit on others who may be similarly situated to what we were.—I have the honor to be, your humble servant,

ROBERT ROBERTS.

In January, 1888, having advised a single lady from Westmoreland who suffered greatly from ovaritis to submit to the removal of the uterine appendages, her mother wrote asking for the names and addresses of some of my former patients who had suffered similarly, and I forwarded a list to her. It is impossible to reproduce all the letters she received in answer to her inquiries, but here is one from a patient who was treated for ovaritis in 1885 :—

17 DRAYTON STREET, *29th January*, 1888.

DEAR MADAM :—I received your letter this morning, and am very pleased to be able to assure you of the very happy results of my operation. I am enjoying *better* health now than I have ever known before. My husband and I can never be sufficiently grateful to Dr. Imlach. If I had only consulted him sooner I should have been saved much suffering and misery. Of course, every one may not feel the same after it. I can only speak as to my experience, and would willingly undergo the operation again to obtain the same result. I only hope your daughter may receive the same benefit, and then you will have nothing to regret.—Believe me, yours sincerely,

M. KIRKWOOD.

As they were all satisfactory, the lady underwent the operation cheerfully, and with permanent benefit, in February, 1888.

It is evidence such as this that convinces me of the justifiability of operative treatment in chronic ovaritis and salpingitis.

Anæmia, also, though more common than hysteria, has no essential relation with this disease. The ovaries have neither cytogenetic nor cyto-lytic functions. But chronic ovaritis is often associated with uterine myoma, and when there is menorrhagia the anæmia is assuredly cured by operation. Again, anæmia may be due to infective pyosalpinx, and that also is cured by operation ; and if it be due to sleepless nights, or to gin and morphia taken to relieve pain, it will disappear after treatment. Unless, however, some distinct relation can be established, it need not be assumed.

In 62 cases of ovaritis and salpingitis whose after history I sought, I obtained useful information at various periods in 43 instances. At least 80 per cent. were greatly benefited in health and free from pain, but only in 60 per cent. had menstruation entirely ceased.

HYDROCYSTIC OVARIES.

The conditions to which I refer was generally considered as a form of ovaritis. Cysts containing clear watery fluid, apparently distended Graafian follicles, grow to the size of an orange, or less, and then burst in the peritoneal cavity, causing great pain. When these cystic ovaries rise into the abdomen the pain is only occasional, but when they are low down in the pelvis the pain is constant. Upon vaginal examination they may be mistaken for small dermoid cysts, but upon abdominal section their true nature is discovered, and their removal frees the patient from all subsequent pain. The tubes are generally healthy and there appears to be little evidence that they originate in any inflammatory process.

A single woman, æt. 23 years, was admitted into my private hospital on 1st July, 1889. The vagina was only a shallow depression. Though she had suffered so much pain during nine years that she was unfit for active employment, there was no appearance of any retained menstrual fluid. As the uterus could be felt *per rectum*, an artificial passage was made next day—Dr Dawson giving ether—between the rectum and bladder. But as the uterus was empty and two large cysts could now be felt in the pelvis, the ovaries were forthwith removed by abdominal section, and proved to be typical examples of hydrocystic ovaries. She has since been entirely free from pain.

When the vagina is absent, three several conditions may be found:

1. Ovaries and uterus small; no pain, and no need of any treatment.
2. Menstrual fluid retained in the uterine cavity or upper portion of the vagina; painful, and requiring careful incision.
3. Hydrocystic ovaries; painful, and requiring excision.

These cystic ovaries are found also in naturally developed women, and are the cause of considerable distress. I have removed them twenty-six times with uniform success, but have only the after history of eleven. These are all, without exception, in perfect health. Of five in which menorrhagia had been a prominent symptom, there was amenorrhœa in two, and menstruation was normal in three.

OVARIAN ABSCESS AND PYOSALPINX.

The simple inspection of a single specimen of pyosalpinx, or ovarian abscess, is a sufficient justification of the removal of these organs, and I shall not waste time in recommending that procedure.

Ovarian abscess is less common than pyosalpinx. When the Fallopian tubes are distended with pus the ovaries are frequently atrophied, but ovarian abscess without also pyosalpinx is very rare, and probably septicæmic. The only instance of acute suppuration of the ovary which I have met was not diagnosed. It occurred in a patient, æt. 40 years, on whom I performed an abdominal section on

October 18, 1888. She was three months pregnant; a dermoid cyst of the left ovary, of considerable size, blocked the pelvis, and she suffered great pain. After the dermoid cyst, which weighed about 1 lb., was removed I found the right ovary brilliantly injected with blood, and increased to three times the normal size. I removed it, and found a cavity containing a drachm of recent creamy pus. The patient made an excellent recovery, was duly delivered of her child at full term, and suckled it. In my former paper I described a case of pyosalpinx on one side, in which the patient became pregnant, and died after delivery, of so-called puerperal fever. There can be little doubt that a similar fate awaited this patient if the suppurating ovary had not been removed in time. Dr Grigg has observed inflammatory disease of the appendages in six fatal cases of puerperal fever. As the bursting of a pyosalpinx may cause fatal peritonitis in women who are not pregnant, its relation with childbirth mortality deserves careful and competent investigation.

In chronic ovarian abscess the ovary is never very large, and its cavity seldom contains more than from half a drachm to half an ounce of pus. Often a degenerate corpus luteum is floating loosely within it, but sometimes this has escaped into the pavilion of the Fallopian tube, and is there clasped by the fimbriæ. In other cases the pus is inspissated and the cavity contracted,

In pyosalpinx both Fallopian tubes may be greatly distended, or there may be only a little muco-pus. Between pyosalpinx and catarrhal salpingitis there is no dividing line. Fortunately this is of little practical importance, for the dangers to health and life are alike, and the treatment is the same, except that in the former case the tubes are emptied by a trocar before removal. In size they may resemble a twisted-up sausage, the walls are sometimes thick and tough, but occasionally they are thin and translucent, as in hydrosalpinx.

The largest tube I have met with (*Lancet*, October, 1886, p. 774) was in a woman, æt. 35 years, whom I operated on August 17, 1889. She had been married eighteen years, but had neither child nor miscarriage. The right Fallopian tube had evidently ruptured into the cellular tissue of the broad ligament, as it occasionally does in tubal pregnancy, and a vast abscess gradually collected, from which seven pints of thick pus were withdrawn. It was impossible to remove the tube, but its size and position made drainage, and she made an excellent recovery. For twelve months previous to operation the tumor had been as large as the pregnant uterus at the eighth month.

On November 25, 1884, I removed the right ovary and tube from Mrs. Sophie Harold, æt. 23 years, the ovary containing an abscess, and the tube being moderately distended with 3 drachms of pus. As a rule, in cases such as these, the other ovary and tube are also inflamed, and require removal; but here they were quite healthy, and were left intact. She recovered quickly, remains entirely free from pain, has had two living children since the operation, and is able for all household work.

On February 4, 1888, I removed two greatly distended tubes, containing each nearly an ounce of pus, from Mrs Procter. She had one child, and was obviously sterilized by disease previous to operation. Since then she has been entirely free from pain, has never menstruated, and is in excellent health.

In 1886 I removed two tubes, enormously distended with fetid pus, from a girl, æt. 17 years, who had lain in bed for three years before I saw her, and being in an extremely hectic state, she succumbed. Her friends had always been told that it was too soon to think of an operation, but one should be careful to leave some interval of time between too soon and too late. The total mortality of all my cases has been 7 per cent., and for the last three years under 4 per cent. It is impossible to enter here into the improved methods of operating, by which the death rate is gradually diminishing almost to vanishing point, and the single discomfort that occasionally follows—namely, yielding of the abdominal cicatrix—is prevented. And I assert that it is impossible to exaggerate the increase of happiness which is added to the lives of those invalids who have successfully undergone the operation.

Pyosalpinx causes most suffering in young and otherwise robust women. It will generally be found that after one or two childbirths or miscarriages the patient has made an imperfect recovery, and has never been well since. Within two or three years the tubes may become so distended as to fully occupy Douglas' space, and push the uterus forward, or they may curl upwards over the fundus uteri, out of reach of the examining finger, or if there is less distension, there may be only slight thickening and tenderness on each side of the uterus. Pain is great, the women are often anæmic, and menstruation may recur profusely every fortnight, or be scanty, infrequent, and very painful.

The gonorrhæal origin of pyosalpinx is generally accepted, and in my experience can be reasonably asserted in at least 50 per cent. of the cases. But it occurs also, though rarely, in virgins, and is then probably tuberculous. In other cases the etiology of the illness is mere guess work.

It has been proposed to tap the distended tubes by a fine catheter passed into them through the uterine cavity, but this is a physical impossibility. It is quite true that a sound can occasionally be passed through the uterine cavity until its tip is felt impinging, apparently directly, upon the abdominal wall; but this is only in lax-fibred middle-aged women, who have prolapsed uterus, and are free from inflammatory disease. Whether the sound passes through the tube or through the wall of the uterus we do not kow. Aspiration or free incision *per vaginam*, is a relic of old gynæcology, when every fluctuant tumor was thought to be perimetritic or parametritic. Aspiration, even when accomplished, is only of temporary benefit, for the collapsed tube quickly swells again. The other tube and the ovaries often participate in the inflammatory process, and there may be effusion into the peritoneum. It seems obvious that it is only by abdominal incision that the complex pathological conditions can be ascertained and adequately treated. The same objections apply to free incision, and, moreover, the immediate results are often disastrous. On the other hand, I believe I have seen two or three instances in which a distended tube has discharged its purulent contents by spontaneous rupture into the vagina, with complete and permanent relief of symptoms.

Information was obtained in thirty-four cases out of forty-six, for whom inquiry was made. The benefit obtained was very striking though 25 per cent. still complained of some pain. Against this, it must be remembered, that some had undergone operation only a few months previously, and were still weak. In about 60 per cent. menstruation had entirely ceased, and in 40 per cent. it was normal.

HYDROSALPINX.

The clinical history of a typical case of hydrosalpinx, in which the tubes are distended with watery flaky serum, nearly always extends over may years, and the pain is so constant and wearing, that the patient is generally eager for any chance of relief. The age of the women is between thirty-five and forty-five, and it is difficult or impossible to distinguish between hydro and pyosalpinx previous to operation. Behind the uterus is a mass which is often mistaken for myoma of the posterior wall of the uterus, but with care two fluctuant tubes can be identified as not in structural continuity with the body of the uterus. The uterine end of the tube is completely closed, the fimbriæ may be simply glued together, or they may be much hypertrophied, and form a thick clubbed end to the tube, and the wall is thin and translucent. The pathological condition is evidently due to an inflammatory process, which is absent in hydrocystic ovaries. It has been supposed that hydrosalpinx is the first stage of pyosalpinx, but I am unable to concur with this opinion. These tubes continue on indefinitely, completely crippling the woman's activity until they are removed. It has been proposed to burst these tubes by violent bimanual examination, to slit them open after abdominal section, and to stitch them to the abdominal wall, but in view of the excellent results I have obtained, I prefer to remove them. The ovaries are generally atrophied, and should be removed at the same time, as they probably play some part as a cause of pain.

To those who argue from analogy, and are without direct experience, the removal or non-removal of their ovaries is an important point. Women have been told that the removal of their ovaries entails a change in their voice, appearance, and sexual feelings. They have been told that they get the voice of a man, and the beard of a man, but that their sexual feelings diminish. I have fully investigated and disproved this allegation, and I have satisfied those whom I care to satisfy, that it is absolutely without foundation. The evidence of a single witness to the contrary is sufficient to show that there is no such physiological sequence, and there are witnesses in plenty. As regards the diminution of sexual feeling, the evidence of several witnesses would be required, and I know of only one—but that witness was on oath in the witness-box.

Out of twenty-eight cases of hydrosalpinx sought for eighteen were reported. Of these fourteen, or 77.7 per cent., were completely cured, and four were only in indifferent health. Some of them are very poor and half-starved.

MYOMA.

I feel bound to refer to the frequent association of inflammatory diseases of the ovaries and tubes with uterine tumor, for it has important practical bearings. A large myoma, freely occupying the abdomen, generally grows slowly without much pain, and there may be no menorrhagia. Until it undergoes the cystic degeneration, which is its natural course after the menopause, or until it presses upon neighboring organs, it may cause no great inconvenience. But there is another class of uterine myoma which occupies the pelvis only, or seldom rises above the umbilicus, and which, though of small size, is much more disabling from pain and menorrhagia. These tumors are invariably associated with inflammatory disease of the uterine appendages, the diagnosis is doubtful before operation, and after it is a matter of theory under which head the cases should be classed. Pyosalpinx is not uncommon, and there is always advanced chronic ovaritis. So far as my observation goes I incline to regard myoma as a frequent sequence to ovarian inflammation in persons of rheumatic diathesis. It is certain that the tumor quickly subsides after removal of the ovaries and tubes, whereas I have become dubious of the advantage of removing healthy ovaries and tubes in the large burdensome uterine tumor, for the diminution in its size is apt to be slow. Hysterectomy is preferable where surgical interference is called for.

Mrs A. R., æt. 37 years, married eleven years, no children, suffering from pain and profuse menorrhagia, which recurred every fortnight, was sent to me in 1887 by Dr Williams, of Oswestry, with a uterine tumor reaching to the navel. With Dr Williams' assistance I performed abdominal section on December 12, 1887, and found both tubes so distended that I mistook them at first for loaded intestine, and there were extensive adhesions. She made an excellent recovery, and is now in good health.

Mrs G. M., married, two children, the last four years old. Since the last childbirth menstruation has been profuse and painful, compelling her (a laborer's wife) to lie in bed for six weeks at a time, and making her permanently unfit for household work. As she had been under continuous medicinal treatment, without any good result, for eighteen months, as the uterus was retroflected, adherent to the sacrum, and enlarged, and as there was great pelvic tenderness, I performed abdominal section on 14th December, found an irregularly enlarged uterus, and removed the thickened inflamed ovaries and occluded tubes. She made a rapid recovery, and, according to my information from the Garston district nurse, has remained well ever since.

These two cases sufficiently illustrate an important series which time forbids my giving in full.

The after-history of thirty-six cases out of forty-seven cases shows that within a period of six months menstruation had entirely ceased in from 65 to 70 per cent., and had become normal in all the others except one. I am only acquainted with one case in which this symptom has not been relieved by removal of the uterine appendages. Her pelvis was completely blocked with a myoma, and hæmorrhage was extremely profuse. The ovaries and tubes were removed on September 20, 1884, but the hæmorrhage has continued unabated, though the uterus has considerably diminished in size. These structures were deeply imbedded in the sides of the uterus, and it is possible that the excision was imperfectly completed. In another case normal menstruation recurred once every five months for two years, and then ceased. In all cases in which pain was severe or disabling, it has been relieved.

I regret that time prevents any illustration of the modern pathology and treatment of pelvic hæmatocele, a subject which is still misunderstood. The term pelvic hæmatocele has no anatomical signification, and as much bitter and personal controversy has gathered about it, I should prefer to describe my cases in three divisions.

1. Cases of pyosalpinx, with tubal ulceration and copious hæmorrhage into the tube and abdominal cavity.

2. Cases of undoubted tubal pregnancy, with rupture and hæmorrhage.

3. Cases of inferred tubal pregnancy, with disintegration of the fœtus and placenta, rupture, and hæmorrhage.

As regards treatment, I have seen one case "left to nature's cure" bleed to death in twenty-four hours, and shall always recommend operative interference.

I regret also that I am unable to deal with the use of surgical drainage in peritonitis, whether arising from ovarian or other inflammation, or to follow out the after-history of patients in whom only one ovary and tube have been removed. In this latter class there is ample evidence that, in chronic ovaritis and salpingitis, to leave one ovary and tube because they look less unhealthy than those on the other side, is to foredoom the failure of the operation as regards relief from pain. But there is also evidence which, I believe, would satisfy you, that in some cases of one-sided pyosalpinx, a healthy ovary and tube have been left with perfect success, *i.e.*, the patients have become free from pain, and have had subsequent pregnancies with living children.

THE INDICATIONS FOR OPERATION IN DISEASE OF THE UTERINE APPENDAGES.* By Egbert H. Grandin, M.D., Obstetric Surgeon, New York Maternity Hospital; Visiting Obstetrician, New York Infant Asylum, etc.

Prior to the year 1882 the uterine appendages played but a minor rôle in gynæcology. Displacements of the uterus, inflammatory affections of this organ, inflammation of the pelvic cellular tissue—these were the topics which furnished chief food for discussion and toward the relief of which the gynæcologist brought the pessary, the intra-uterine applicator, the tampon, and hot douche to bear. Surgical Gynæcology interested itself mainly in the removal of ovarian cystomata, in the opening of what were termed pelvic abscesses, in the device of plastic operations on the vaginal walls, in the repair of the lacerated cervix. Proof of these assertions is afforded by the most cursory survey of gynæcological literature prior to the year of which we are speaking. In the year 1882 reports began to reach this country of the wonderful operations being performed in Birmingham, England, by Mr. Lawson Tait, and pilgrimages were made to this Mecca to learn the doctrines and to witness the feats of this nineteenth century Mahommed. About this time that honored and most conservative of American gynæcologists, Dr. Thomas Addis Emmet, presented specimens of tubes and ovaries obtained from Mr. Tait to the New York Obstetrical Society, and shortly thereafter isolated reports of laparotomies for the removal of the uterine appendages began to appear in the medical press, the number gradually increasing until we read the record of one hundred and over in the practice of single operators. As if by magic, the pessary, the applicator, the tampon, and the hot douche vanished into the background; pelvic abscess, aside from the puerperal state, ceased to exist; cellulitis as a disease factor was well nigh strangled, pelvic pathology was revolutionized, and the cry became salpingitis and its sequela, peritonitis. Whereas, prior to 1882, persistent local treatment palliated—according to some, cured—circum-uterine inflammation, the teaching after this date gained ground that laparotomy, followed by the removal of the uterine appendages, in the vast majority of cases offered the sole hope of cure; and teaching of this nature, backed both by precept and example, dominated, with here and there a protest against it, until quite recently the laparotomy tide shows signs of arrest in face of the questions: "Do ultimate results always justify the laparotomy?" If not, "In what class of cases is laparotomy stringently indicated?" To the first of these questions we are all patiently awaiting the answer from those who, having acquired and being deserving of the title "laparotomist," can alone give it. The second of these questions it is my aim to endeavor to answer, in the belief that the time is more than ripe when a sharp line should be drawn between cases which can reasonably hope for cure or palliation only through laparotomy, and cases where honest, persistent, long-continued local and general treatment will result in ample palliation, if not in a *restitutio ad integrum.* My argument may fitly be prefaced by the statement that I do not pose as an opponent of laparotomy, that I do not impugn the honesty of purpose of those who have figured as successful operators during the past few years. I am simply convinced that there has been far too much miscellaneous operating, and that frequently we can save rather than mutilate. Lest any one take exception to this strong term "mutilate," let me define it as applicable to those instances, quite infrequent to-day, fortunately, where "slightly cystic ovaries," "slightly thickened tubes," and "tubes containing a little cloudy serum" are removed. No one knows the full influence of the tubes and ovaries upon woman; and in the light of data pointing to mania following laparotomy, and in view of the reflex nervous disturbances which are often the heirlooms of women operated upon, it is clear that it may be preferable not to remove organs which are apparently slightly diseased rather than by removal to render the woman's last condition worse than her first. She may have been practically unsexed through disease, but she is mutilated if extirpation of organs apparently diseased fully unsexes her and leads her to the border-land of insanity, if not actually over the brink.

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* Read before the Medical Society of the State of New York at its eighty-fourth annual meeting.

In weighing the indications for operation in case of disease of the uterine appendages we can gain absolutely no clew from a careful study of the vast statistical material at our disposal. Such data are often largely compiled from the material afforded by our general hospitals, the exigency of whose service renders it impossible to keep patients long enough to determine the value of routine methods of treatment in any given case. Extirpation of the appendages is, therefore, often resorted to by the hospital surgeon in instances where the strong probability is, were the patients from his private clientele, the non-surgical methods would be amply tested prior to advocacy of the knife. Under this assumption we may explain the fact that, whereas certain gentlemen have advocated and performed laparotomy for what they term "catarrhal salpinx" and "cystic ovary," other equally competent and conscientious observers maintain, and can substantiate the statement, that such conditions may usually be amply palliated by the routine non-surgical means. As regards statistics derived largely from private practice, while they are more reliable as a guide toward the formulating of exact indications, still they are far from conclusive, owing to the vague manner in which the clinical phenomena are often stated, and owing also to the frequently hasty and imperfect description of the specimens. Take, for example, the recent report of seventy-five cases of abdominal section by Dr. R. Curtis Miller, of Charleston, West Virginia. Scores of careful observers will testify to the fact that in many of the cases as reported by this gentleman more conservative measures than resort to the knife palliate the symptoms satisfactorily to the patient. To select at random, in one case the ovaries were cystic, the patient's chief symptom being dysmenorrhœa and pain in the ovarian region. In another case the ovaries were cystic and considerably enlarged, the tubes being in a catarrhal condition; the patient always suffered from more or less dysmenorrhœa and leucorrhœa and from constant uneasiness over the ovarian regions. In still another case both ovaries were enlarged and cystic; the patient suffered from intense pain in the back. In still another there was great suffering from dysmenorrhœa and the ovaries were enlarged and very sensitive to the touch. Similar instances might readily be multiplied, and this gentlemen's record is only referred to because it is the most recent. Obviously, dysmenorrhœa and pain in the back are not indications for extirpation of the appendages, and the description of the removed appendages does not reveal any condition not amenable to prolonged non-operative treatment. Of course the fact is apparent that none of these specimens, if left in the abdomen, would in the slightest have endangered life, and, although the patients all recovered, it must be frankly owned that this recovery from the operation was purchased at the risk of life, and also at the risk of not being ultimately cured, for there are patients who, notwithstanding extirpation of the appendages, are not bettered, and sometimes are even worse off—a glaring proof, if one were needed, of our absolute ignorance of the sum total of the influence which even slightly cystic ovaries may exert on the nervous centers of woman. It seems, indeed, that some women are better off with such ovaries than without them, and it is a fact, admitted by all pathologists, that as yet the boundary line can not be strictly drawn between the sound and the unsound ovary.

Statistical data being fallible, then, as a guide toward formulating the indications for laparotomy for the removal of the appendages, we must needs place reliance on symptomatology, both the rational and the physical. And just here the difficulty arises that the rational history is exceeding variable. We have all examined women whose complaints were pitiable in the extreme, and yet have detected but slight disease, if any, of the sexual organs. On the other hand, though more infrequently, we find aggravated disease associated with slight symptoms. In the one case the neurotic element, as it is convenient to term it, predominates in the woman; in the other it is, as it were, torpid. Again, the social condition and the occupation of the patient alter the symptomatology, and consequently the indication to be drawn therefrom. These facts are too patent to require argument. From the standpoint assumed in this paper the chief question to be answered clinically before advocating the extirpation of these appendages is: Are these appendages diseased to such a degree that the patient risks, possibly, prolonged invalidism, possibly life, if they be not removed? I do not take the argument as worthy of serious consideration that the appendages are sufficiently diseased to render them useless. No man can say in the average case that the appendages are useless, for instances are numerous where women with cystic ovaries, with catarrhal salpinx, with indurations in the pelvic vault, with *prob-*

able pyosalpinx, have, after non-operative treatment, conceived. If our past experience teaches us that the progress of a given disease is toward a fatal issue, or, if not so far as this, at least incurable by non-operative methods, then it is irrational to withhold the knife, even though there be a chance of the knife not curing, and a slight chance of mania following the operation. In such cases the average patient will be willing to face possible future ill, for if she refuses operation she can not look forward to anything else. Given an instance, however, where my leading question can not be answered affirmatively, and then, except where the social condition renders it utterly impracticable for the patient to submit to protracted routine treatment, laparotomy is not at all stringently indicated. Routine measures of treatment—hot douche, the gentle tamponade, counter-irritation, galvanism, faradism, regulation of the bowels, tonics, abstinence from factors which directly congest the pelvic organs—these measures will palliate amply the symptoms, even if they do not effect an anatomical cure. Such has been, and is still, the experience of the writer, and his experience, he has cause to know, is very far from unique.

While ovarian and tubal disease are often associated, the one may occur without the other, and we will therefore sketch briefly the indications, as they appear to the writer, first, in case of the ovary, and secondly, in case of the tube. It is evident, of course, that, owing to the uselessness of one of these appendages without the other, where the indications favor the removal of the one, nothing can be gained by leaving the other. It has already been stated that it is impossible as yet to define strictly the boundary line between the healthy and the diseased ovary. If the pathologist can not do this, the clinician, obviously, is at a still greater disadvantage. Given a prolapsed, markedly enlarged, congested ovary, with reflex symptoms clearly traceable to it, on what grounds can we base our decision in favor of laparotomy? The case is not complicated by circum-uterine inflammation. The therapeutic aim is simply to lessen the congestion of this ovary, to maintain it in a fairly normal position. In the vast majority of instances it is the experience of the writer that the bearer of such an ovary need not be laparotomized. Resort to the self-suggesting means of lessening congestion (inclusive of galvanism), followed by one or another of the pessaries devised for maintaining the prolapsed organ at a slightly higher level in the pelvis, will effectively relieve the patient of her symptoms, even though restoration of the ovary to its normal size be not obtained. This is a simple case, however, but it leads naturally to a higher grade of ovarian disease—the true tumor of the ovary—whether cyst or solid tumor. Given an instance of this nature—that is to say, a fluctuating tumor of the ovary or a solid, possibly malignant or dermoid growth—and the indications at once alter. Careful observation of the case, where the symptoms are not urgent, will reveal progressive increase in the size of the tumor. Examination under an anæsthetic, in obscure cases, will tell the trained diagnostician that he is dealing with something more than simple hyperæmia of the ovary, and will, if the tumor is a cyst, reveal the fairly uniform fluctuation which is the characteristic of tumors containing fluid. If the tumor is accompanied by much pain, the inference that the case is one of dermoid or of a malignant nature will be warrantable. If circum-uterine exudation complicates, then abscess of the ovary or associated tubal disease will suggest itself. In instances like these there can be no question of the proper course to pursue. The tendency of such growths is toward increase in size. The larger the tumor the greater the difficulty of an operation. Given, then, an established diagnosis of ovarian cyst, or dermoid, or fibroid, or abscess of the ovary, or malignant disease, and speedy extirpation is the justifiable rule of practice. As regards what has been termed cirrhosis of the ovary—where the ovaries are small and indurated, and the symptoms are hysteroneurotic—the belief of the writer is that, in the vast majority of cases, the cerebro-spinal and sympathetic systems are at fault fully as much if not more than the ovaries, and that, therefore, extirpation of these organs is not indicated as a *dernier ressort*, and then empirically and tentatively.

To pass now to the tubes, the question propounded is much more difficult to answer. Rarely do we find uncomplicated diseases of these organs. Very frequently an associated factor is circum-uterine exudation, which necessarily interferes with careful examination, and therefore with exact diagnosis. Fortunately, however, the ætiological factors of tubal disease are fairly well established, and these factors, carefully weighed with the symptomatology, will not infrequently assist us in laying down the indications in a given case.

Clinically, we may ordinarily distinguish the following diseases of the tube: Catarrhal salpingitis, hydrosalpingitis, and pyosalpingitis. The further varieties, mentioned in particular by German writers, must, as a rule, be considered, from a clinical standpoint, theoretical.

Simple catarrh of the tubes, uncomplicated, as usually it is, by circum-uterine exudation, rarely, if ever, demands laparotomy. Cure of the affection may not be obtained through resort to non-operative measures, but the symptoms may be amply palliated without the knife, which may not cure and which does risk a life not at all endangered by the existing disease. We all know how difficult it is to cure catarrhal affections in other parts of the body, and no wonder, therefore, if we cannot speak of cure in case of catarrh of the tubes, the mucous membrane of which is inaccessible to direct therapeusis. But if we can effect a symptomatic cure of an affection which as regards life is benign, what right have we to subject our patient to an operation which has a mortality percentage and which at best only adds an anatomical cure to the symptomatic? It is further to be remembered, especially in connection with these cases, that the necessary traumatism accompanying every laparotomy may lead to circum-uterine exudation, to adhesions so called, and this may eventually prove a greater source of discomfort to the patient than the catarrhal tubes.

were. An argument which may here be advanced is that the catarrhal form of salpingitis often merges into the purulent, and that to avoid this untoward event it is wiser to remove the catarrhal tubes. The reply is, that in these instances, especially if the woman is young and married, she will be willing to take her chances if the factors are fairly outlined to her; and, again, the justification of a major operation should rest on stronger grounds than a remote possibility. Serous pleurisy sometimes merges into empyema, and yet it is not a sound rule of practice to open the pleural sac to cure the former.

The condition just spoken of is, however, infrequent compared to that of hydrosalpinx and pyosalpinx. In case of pure hydrosalpinx we are not dealing with simple congestion associated with slight enlargement of the tube. We are brought face to face with a true tumor —that is to say, there is distinct enlargement of the tube from an accumulation in its interior of fluid other than pus. Here, if the disease is uncomplicated by circum-uterine exudation, the indication for extirpation may be readily formulated as the result of local treatment. If such treatment proves that the accumulated fluid can drain into the uterus, then there is no immediate call for laparotomy; indeed, the operation may never be demanded. Symptomatic cure may be attained without the knife, and this will satisfy the patient and ought to satisfy her attendant. If, however, the result of local treatment is not diminution in size of the enlarged tube, then, in view of the fact that the distending tube may rupture and the case become aggravated from the resulting circum-uterine exudation, and in view of the further fact that the fluid in the tube may become purulent, the indication is in favor of removal—that is to say, the future risk warrants present risk. Perhaps, instead of extirpation, the future may set its seal of approval on the opinion held by Polk, among others, that aspiration and drainage *per abdominem* is preferable to total extirpation. Whatever the case, operation is here indicated, and, in the opinion of the writer, by way of the abdomen, until the advocates of galvano-puncture *per vaginam* have amply proved by their work the validity of their statements.

To pass now to pyosalpinx. The diagnosis once absolutely established and the indication is extirpation. If the symptoms are not very aggravated, if the tumor, as determined under anæsthesia, is not large, if drainage into the uterus is evident, then palliation, perhaps symptomatic cure for years, is possible. In the experience of the writer, however, the tendency of this disease is from bad to worse, notwithstanding prolonged and rational local and general treatment. Eventually operation is indicated by the very urgency of the symptoms, and then the nervous centers, weakened as the result of prolonged invalidism, are often powerless to withstand shock. The diagnosis of pyosalpinx must, however, be clearly established, and this usually calls for most acute diagnostic acumen. The circum-uterine exudation accompanying pyosalpinx masks the condition of the tubes; therefore examination under anæsthesia is requisite to establish a diagnosis, as well as such local treatment as will cause the absorption of the major part of the exudation, and thus enable us to palpate the tubes. The thermometer, in obscure cases, will assist in diagnosis. Pus within the body necessitates hectic fever. A careful consideration of the past history of the patient is a further aid in diagnosis. Gonorrhœa, septic infection after miscarriage or labor, neglected or badly managed miscarriage, sounding of the uterus, injudicious intra-uterine applications, the intra-uterine stem pessary, the apparatus devised for insertion into the cervix for the cure of sterility—data of this nature in the past history of the patient, associated with hectic fever and, on local examination, the evidence of distended tube, of fixation of the uterus, etc., form the *ensemble* which justifies the diagnosis of pyosalpinx and a radical operation. This operation may not cure the patient. She may for years be hystero-neurotic; she may develop mania, but the radical operation, if she survives it, offers her a hope of cure not otherwise obtainable, and it removes at once the chance of death from what was formerly called idiopathic peritonitis. A frank statement of the probabilities will, in case of pyosalpinx, ordinarily cause the patient to demand the operation.

The indications, as very imperfectly outlined here, if accepted and stringently insisted upon, will place laparotomy for the removal of the diseased appendages in a more favorable light than it rests in to-day.

CLINICAL RECORDS.

A CASE OF ACUTE NEPHRITIS AND URÆMIC CONVULSIONS. Complete recovery. Remarks. (Under the care of Dr. J. Walter Carr). Victoria Hospital for Children, Chelsea.

Although recovery from a condition of acute inflammation of the kidneys in a child is not uncommon even when evidence of uræmic poisoning of the system is present,* we consider that the publication of a well-marked case of the disease, in which special symptoms were carefully noted, will be of interest to the profession. Dr. Carr has drawn attention in his remarks to the more important points in the case, such as the absence of dropsy and the presence of cardiac enlargement. The condition of the urine, the specific gravity, and absence of albumen and casts, indicated the completeness of the recovery. Pilocarpine was, as usual in children, well borne; it would, however, be as well for our readers to remember its occasional depressing action on the heart.

H. M——, æt. six years, was admitted on Feb. 10th, 1889, at 7.30 P.M. The following history was obtained, partly at the time and partly subsequently. He had had measles three years before. There was no history of scarlet fever or of anything pointing to it; no history of chill or of exposure to cold. He had been ailing for a week with headache, chilliness, and slight cough, and had complained of pain below the left nipple. No pain in the loins; no œdema at any time. Bowels irregular; urine thick, red and scanty; micturition frequent. On Feb. 10th, the day of admission, he was very sick from 4 A.M. to 11 A.M.; he then became unconscious, and between 1 P.M. and 3 P.M. had five convulsive attacks; he then slept till 5 P.M. and afterwards had a screaming fit.

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* Eustace Smith; Diseases of Children, p. 41. Wright and Ashby, p. 226. Saundby: Lectures on Bright's Disease, p. 61.

On admission his condition closely resembled that described as "cerebral irritation." He lay on his side, coiled up in bed, restless, and screaming out when touched. Temperature 98.4°. No œdema; no desquamation anywhere. At 9.10 P.M. he had a convulsive attack; pupils dilated, insensible to light, no conjunctival reflex; spasms alternately more on one side than the other. Temperature 100.4° (in rectum). The diagnosis at this time being very uncertain, the house surgeon, Mr. Staveley, drew off three ounces of urine by catheter. This was found to contain nearly half albumen, a trace of blood, and some uric-acid crystals, sp. gr. 1020. Accordingly, as the convulsions continued, one-tenth of a grain of pilocarpine was injected, patient placed in a hot bath, and afterwards wrapped in blankets. Much sweating followed, the convulsive attacks became less severe, and by 11 P.M. had entirely ceased. They did not recur. A dose of compound jalap powder was administered, but speedily vomited. Ten grains of bromide of potassium and five grains of chloral hydrate were given per rectum, and patient slept well afterwards. Temperature: 2 A.M., 102.8°; 6 A.M., 100.8°; 10 A,M., 98.6°; rose once to 100° next day, but never afterwards above 99°. Bowels acted well during the night. Next morning the patient was quite conscious and free from sickness. After midday he began to take food and to pass urine for the first time since admission.

On further examination, he was found to be a well-nourished boy, pale, and with rather dry skin; tongue thickly furred. Heart's apex beat in fifth space half an inch outside nipple-line; impulse markedly forcible; slight epigastric pulsation. Cardiac dullness began at third rib, cartilage end, along middle line of sternum; sounds normal; no distinct accentuation of second sound. Pulse hard and rather incompressible. A few scattered râles in lungs. No ophthalmoscopic change visible. Urine for the twenty-four hours: acid, sp. gr. 1022, albumen $\frac{1}{8}$, urea 1.3 per cent., a large deposit consisting of numerous epithelial, granular and hyaline casts, red blood-corpuscles, renal epithelial cells, and uric-acid crystals. He has been sweating freely each night, and bowels well open.

Feb. 15.—Heart's apex beat in fourth space just outside nipple, impulse much less forcible, and pulse much more compressible. Urine contains no blood, and only a faint trace of albumen. After this the boy continued to make an uninterrupted recovery, the tongue slowly cleaned, and food was always taken well. The urine passed per diem varied in quantity from twenty to thirty-five ounces; sp. gr. 1015-30;

generally no albumen, but occasionally a very faint trace. The casts gradually got fewer in number, and the process of disintegration of epithelial into granular ones was well seen; uric-acid crystals persisted for a long time, but completely disappeared before the patient was discharged. He was kept exclusively on milk and barley-water until Feb. 17th, when milk pudding was first given; bread-and-milk on Feb. 21st, fish on March 14th, and meat on March 18th.

March 21st.—He got up. The bowels were kept freely open throughout by frequent doses of saline aperients. After Feb. 16th, citrate of iron and quinine (two grains) was given three times a day.

He was discharged on March 29th, looking stout and well. Heart's apex beat in the fourth space in the nipple-line, normal in character. Pulse not of high tension. Urine for the twenty-four hours: sp. gr. 1022, urea 2.6 per cent., albumen a very faint trace, no casts.

Oct. 11th.—Patient seen to-day, is in good health. In recumbent position heart's apex beat is in the fourth space; in the erect posture it can just be felt in the fifth space in the nipple-line. No albumen in urine.

Remarks by Dr. Carr.—The leading features of clinical and theoretical interest in this case may be summarized as follows:—1. As to the cause of the nephritis nothing definite could be made out, a much less common occurrence in children than in adults. Whilst the history seemed altogether to exclude scarlet fever, yet the character of the illness and the rapid and complete recovery under treatment point to an acute attack of nephritis uncomplicated by any chronic renal disease, and to the scarlitinal form rather than to the more intractable variety due to chill. 2. The case illustrates the statement of Dr. Saundby* that uræmic convulsions and vomiting are not of very serious significance in the acute nephritis of children. 3. The rapid rise of temperature with—and apparently exclusively due to—the convulsive attacks, is interesting as an illustration of the statement of Dr. Gowers† that severe convulsions, whatever their cause, always produce fever, so that in such cases the thermometer gives little assistance in diagnosis. The ultimate cause of the pyrexia is obscure, but inasmuch as rapidly repeated convulsions leading to the status epilepticus tend to cause hyperpyrexia, and as the latter is also often due to cerebral injuries we may assume that convulsions also lead to fever by some damage to the brain, and probably through the cerebral circulation. Is it by producing cerebral anæmia? 4. The changes observed in the condition of the heart were of great importance. On admission, the apex beat was in the fifth space half an inch outside the nipple-line. This would hardly have been due solely to hypertrophy, as a few days later it was in the fourth space in the nipple-line. On the other hand, the condition was not one of dilatation only, for the impulse had a distinctly heaving character, and the tension of the pulse was very high. Probably there was a combination of the two conditions, for it is well known with what extreme rapidity cardiac hypertrophy may occur in children. Certain it is that considerable extra strain was thrown upon the heart, and that so far, inasmuch as no œdema had occurred, that strain had been successfully met; the complaint of pain below the left nipple is very suggestive in this connection. Are not the marked over-action of the heart and the absence of the dropsy together strongly corroborative of Cohnheim's view that when the kidneys are partially disabled by disease the left ventricle acts with increased energy; whilst, at the same time, a corresponding resistance is maintained in all parts of the arterial system, in order that more blood may be sent through the kidneys, to compensate as far as possible for the imperfect depuration which each portion undergoes in those organs? Immediately vicarious elimination was obtained through the skin and bowels, and the congested state of the kidneys relieved by a simple fluid diet, the heart returned to its normal condition. In an adult with a heart less responsive to such a sudden strain, or in a child weakened by previous illness, the renal elimination would probably have been so imperfect that acute dropsy would have been set up. But this possible absence of dropsy, in cases even of acute Bright's disease with uræmic convulsions, when it would be most expected, of course, renders the immediate examination of the urine, a matter of vital importance for diagnosis and treatment. In Dr. Dickinson's work on Albuminuria a case of scarlatinal nephritis is described, fatal from uræmia, but with scarcely a trace of œdema. 5. The rapid improvement following the injection of pilocarpine is interesting. Is it possible as Dr. Lauder Brunton suggested in the Croonian lectures, that the alkaloid may act as a direct antidote to some poisonous matter in the blood? 6. Another noteworthy point is the persistence of uric acid in the urine, as if some defect of eliminative action remained after all other signs of renal mischief had disappeared. Could it be due, as Dr. Saundby has suggested, to an excessive quantity of milk being given? The fact that it disappeared when the patient had a more mixed diet is significant. I have noted the same occurrence in a child recovering from scarlatinal nephritis and fed mainly on milk. It would be interesting to know whether it is common. Dr. Dickinson states that "sometimes in the later stages, when the urine is no longer scanty, a considerable deposit of uric acid may be noticed, such as to indicate a positive increase in its excretion, as if the kidneys with returning function were removing an accumulation."—*Lancet.*

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* Lectures on Bright's Disease.

† Diseases of the Nervous System.

TWO CASES OF APPENDICITIS.* By Robert Milbank, M.D. Visiting physician to the New York infant asylum.

From a number of cases of appendicitis which I have seen I have selected the two following cases in the hope that the report of them might prove interesting and instructive:

Case I.—No Operation; Resolution: Recovery.—On the 29th of July last I was called to see a gentleman who was suffering from what he supposed to be an attack of acute indigestion, he having frequently suffered after eating different varieties of fruits and vegetables. He was a man of forty-five years of age, apparently in perfect health, excepting the trouble for which he called me. His habits were regular, he had indulged in no excesses, and was evidently strong physically as well as mentally. He was a minister of a foreign country to our Government. I found him walking about his room, occasionally striking his chest with his hand and complaining of intermittent attacks of pain. He told me that he had eaten, among other things, for his breakfast a saucer of blackberries, and that he had not had any comfort since about an hour after breakfast. He was quite sure that the indigestible berries which he had eaten for breakfast were causing all the trouble. He begged me to give him something, either in the way of a cathartic or something to promote the digestion of the offending substance. He said that he occasionally suffered from these attacks of indigestion, and thorougly understood what was the matter. He only sought medical advice for a remedy, but not for a diagnosis. I assured him that it would be impossible for me to intelligently diagnosticate his case or treat him without a careful physical examination. The recollection of several cases of severe abdominal disease which had passed unrecognized caused me to insist upon his going to bed immediately. He at first refused to undress, but proposed to compromise by lying on the lounge. He finally consented, was undressed, and went to bed. Upon examination, I found that he had severe pain extending all over the abdomen, but most severe in the epigastric region. He was tender on pressure at this point, perhaps rather more than at any other. The right iliac region presented another point of tenderness about two inches to the left and above the anterior superior spinous process. I found here a small tumor apparently about an inch and a half in length by three quarters of an inch in width. Light percussion showed dullness over this area. His temperature was 100.5 F. under the tongue; his pulse was 100, and had a sharp, quick, wiry character, somewhat hard to the touch. I suspected that he had appendicitis, and informed one of his friends who was present that he was suffering from a grave disease, and advised sending for his wife and son, who were several hundred miles from the city. I also suggested a consultation, which was promptly refused, his friends feeling very positive that I had much overrated the severity of the trouble. I, however, persuaded him to remain in bed and to allow me to procure a nurse for him. I used hot fomentations over the seat of the trouble, administered enough Magendie's solution to keep him free from pain. I remained with him for a couple of hours, and, finding him very much relieved and somewhat drowsy, I left him for the night. I made an early visit the following morning, and found his temperature 101.5°, his pulse 110, his respirations 16, and feeling very much more comfortable. He now asked permission to get up and dress. The epigastric pain had entirely gone, the abdominal pain was scarcely felt at all, but there was a little pain over the appendix. The tenderness on pressure was only present at this point.

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* Read at the annual meeting of the Northwestern Medical and Surgical Society, December 18, 1889.

I insisted upon having a consultation, and called Dr. Charles K. Briddon, who saw him with me about noon. He confirmed my diagnosis, and announced to the patient that his life was in danger, and that we both thought an operation would probably have to be performed.

The consultation led to the making of an appointment for the following day, unless urgent symptoms presented themselves before that time. The hot fomentations were kept up, and an occasional small dose of Magendie's solution was given. A scanty liquid diet was ordered, and at midnight the patient was feeling quite comfortable and was quite jocular over what he considered my unnecessary solicitude. His temperature and pulse at midnight were, respectively, 101.5 and 110.° He passed a good night, sleeping fairly well, and in the morning his pulse was 100 and his temperature 101°. This was about his condition when Dr. Briddon saw him with me at noon. We decided to keep up the treatment and see him together again the following day. He rested well that night, and on the following morning his temperature was 100° and his pulse 90. At our consultation we decided that it would not be necessary to meet again the following day unless his symptoms changed. He was entirely free from pain, but still winced at the slightest pressure over the appendix. The mass had become reduced considerably in size and in dullness on percussion. In three days after this time his temperature, which had been normal, had a slight rise, being 100.4°. In a few hours it had fallen to normal. The tenderness over the appendix was very slight, and the patient was in all respects apparently well and desirous of getting up to resume his business. In a week he was allowed to take solid food in small quantities, and in less than three weeks from the time of the first attack he was walking around.

He informed me that he had once had a similar attack while making a short stay in Brazil, and that an English physician who was there pronounced it an inflammation of a part of the large intestine near the point of entrance of the small intestine.

Case II.—Early Laparotomy ; Recovery.—Mrs. L., æt. twenty-four years, married eight months, had menstruated regularly during this period. She gave no history of any previous disease of any kind. She visited one of the theatres in this city on the 19th of November. During the performance she suffered somewhat from epigastric pain, which increased very much toward the close of the performance. She returned directly to her home, and, by the advice of some friends, drank brandy and Jamaica ginger. The pain diminished slightly, but was still sufficiently severe to cause her to send for me. I arrived about one o'clock in the morning of November 20th, and found her in bed with diffuse abdominal pain radiating from the epigastrium, where it was most severe. Tenderness on pressure was present all over the abdomen, the most tender point being in the right hypochondriac region. Temperature normal, pulse 72. I gave her five minims of Magendie's solution hypodermically. This, affording no relief, was repeated in about three quarters of an hour. By 2.45 she was considerably relieved and felt like going to sleep when I left her.

At seven o'clock I was again called, the pain having returned with much severity. I found her pulse 112 and her sublingual temperature 100°. Pain localized over the appendix and slight pressure caused great distress. I made the diagnosis of appendicitis. Two hours later her temperature was 101° and her pulse 120. I announced to the family the gravity of the disease and the probability of the necessity of an operation very soon. I proposed a consultation with Dr. Charles K. Briddon, who saw her with me at 2.30 the same day. After examining the patient, and learning from me the rapid appearance of serious symptoms, he agreed with me as to the diagnosis and as to the propriety of an early operation. I announced the result of our conference to the patient's husband, who, before consenting to any operation, desired the opinion of Dr. Robert W. Taylor, to which I gladly assented. Later in the day I met Dr. Taylor, and, after a careful review of the case, we both decided to call in Dr. Charles McBurney, who agreed with the other physicians as to the diagnosis and operation. Owing to the absence of Dr. Briddon from the city in the afternoon, it was not possible the perform the operation until late at night, when we all thought it had better be done, even though we should have to forego the advantages of daylight. The result has proved that we were right in losing no time. The operation was commenced by Dr. Briddon at 12.10. He was assisted by Dr. McBurney, Dr. Taylor, and myself. At this time the patient's temperature was 101.5° and her pulse 124. She had been kept moderately comfortable during the day by the frequent application of hot flaxseed poultices and an occasional hypodermic injection of Magendie's solution.

The operation occupied a little over two hours, the appendix being removed and found to be rather longer than usual. About half an inch from its junction with the large intestine a small movable object about the size of a small pea could be felt. There was an enlargement of the appendix at about its middle due to the presence of a hard mass in its interior, by which it was distended. About half way between this mass and its free extremity one side was very dark and gangrenous in appearance, with a correspondingly fetid odor. The ulceration did not extend through its coats, but it was the opinion of all of us that a few hours more, perhaps twelve at most, would have terminated in perforation. I presume that the full details of the operation itself have been reported by Dr. Briddon, and I will therefore not take up any time by a description of so well known an operation here.

Four hours after the operation the patient's temperature was 100.5°. She had a little pain, which was easily relieved by hypodermic injections of Magendie's solution.

At eleven o'clock in the morning it was 101.4°, pulse 130. At 6.25 P. M. 101.8°, pulse 130. At 9.45 P. M. her temperature rose to 102.5°, and her pulse to 136, her respirations being 18.

At 12.20 A. M., November 22d, her temperature was 103.5°, pulse 136, respirations 12; she suffered considerable pain, except when under the influence of Magendie's solution. Her face was dusky and some tympanites was present. At 5.10 her temperature was 103.8°, her pulse 138, and her respirations 12.

Seven o'clock, temperature 103.2°, pulse 138, respirations 12. She did not vomit and had no movement from the bowels. The evidences of local peritonitis were very plain. At 9.45 temperature had risen to 103.8°, pulse 136, respirations 12. At 11.40, temperature 193.6°, pulse 136, respirations 12.

During all this time the patient passed urine only by catheter. She was given a tablespoonful of matzoon every three hours, and ice-water by the teaspoonful to allay thirst. She now received an ounce of sulphate of magnesium in drachm doses every hour. An hour after the last dose, the bowels not having moved, an enema of turpentine, soap, and hot water was administered. This was retained about five minutes, when a large, loose, watery movement of the bowels followed. On November 23d her temperature was 102°, pulse 126, respirations 18. On this day she again received a drachm of sulphate of magnesium every hour until eight doses had been given. The bowels moved freely, and the tympanites disappeared partly. From this time her temperature gradually fell until Sunday afternoon, November 24th, when at 3 P. M. it was 99.8°. Two days afterward she had a slight rise, temperature going to 101°. In twenty-four hours it had fallen to normal and has never exceeded that since. The wound healed very well at its upper end, but at the lower end there was some pus at the site of the sutures, which were silk-worm gut, and the granulations were pale and unhealthy. An ointment was used consisting of an ounce of bismuth subnitrate, a drachm of balsam of Peru, and an ounce of zinc ointment. In a few days, suppuration still continuing, the use of this ointment was discontinued, and I substituted the subiodide of bismuth in powder. Its use caused a rapid discontinuance of the discharge and healing of the wound. Three weeks after the operation the patient was able to be lifted from her bed and placed in a recumbent chair.

In the first case mentioned in this paper recovery took place without operation, but it seems to me that there is little in that fact to afford encouragement for delayed operations. When we take into consideration the fact that this gentleman had had, undoubtedly, a similar attack, and that it was followed in a few years by a second attack, it seems to give warrant for the prediction that other attacks are likely to follow; and who shall say that their termination will be as fortunate as those of which we have cognizance? We all know of the case of a member of our profession who, after having had an attack of appendicitis in which spontaneous cure was effected, was compelled within six months to submit to laparotomy, which was, fortunately, successfully performed. When we come to supplement Case I. with Case II. and its gangrenous appendix, which gave rise to the rapid supervention of serious symptoms, it seems that we are warranted in adopting the views of those who advocate early operations for appendicitis if we are not willing to go so far as to follow those who take the very advanced view that intermediate operations should be done—namely, those where spontaneous recovery has taken place—and that all chance of future harm shall be shut off by operating as soon as health has been sufficiently restored to permit the appendix to be removed. If we have seen in Case I. one of Nature's so-called cures, in Case II. we can point to a human life saved by an early diagnosis and an early operation.— *N. Y. Medical Journal.*

TUMOR OF THE PANCREAS, LAPAROTOMY, RECOVERY.

By Waldo Briggs, M.D., Professor of Clinical Surgery in the Beaumont Hospital Medical College.

Tumors of the pancreas are of the greatest interest to surgeons, especially as it has been only of recent date that operations have been made for their removal. Cysts of this organ have been frequently incised and the cyst walls stitched to the abdominal wound, but the removal of a solid growth with a portion of the gland itself is very rare, and in the literature of the subject at my disposal I can find only three cases similar to my own, one reported by Bilroth, one by Bozeman and by Rokitanski. Bozeman's was successful; Rokitanski's was not finished, as the adhesions were so great between the omentum, transverse colon, and stomach.

The history of the case which I now desire to report, briefly stated, is as follows: Patient, German, æt. 45 years, mother of five children; good family record. About a year ago she was attacked with occasional spasms of the stomach, and one of the attacks which was unusually severe was followed by gastric inflammation and then chronic gastritis. The latter was accompanied by constant vomiting, and the food ejected from the stomach was continually tinged with blood. There was also an occasional passage of clotted blood from the bowels. For a number of weeks no notable change from the above symptoms occurred except increasing emaciation. Six or eight months after the first symptoms presented themselves, there was noticed a gradual increasing abdominal enlargement until the body was enormously enlarged. At this time I was called in, and in my casual examination thought it a case of ascites dependent upon organic changes. Later finding the heart sounds normal and analysis of urine proving nothing unusual, I questioned her more closely on the general history of the case, and from her answers, and closer physical examination diagnosed an abdominal tumor, probably from the pancreas, and concluded to tap her to verify the diagnosis.

This I did and after withdrawing the fluid, which was of a dark coffee color containing numerous small bodies resembling hydatid degeneration, I placed her on the table and found a growth in the epigastric region extending over into the left hypochondrium. The tumor was hard, smooth and globular and could be freely moved about, but on respiration there was only slight movement of the growth.

My conclusions based upon the history of abdominal pain, the gastric irritation, the copious and constant vomiting (which disappeared in the latter stages, proving that the tumor, from its own weight, had dropped down and was no longer in contact with the stomach), the increasing emaciation, the dark grumous blood ejected from both stomach and bowels, the fact that the tumor was nearly stationary on respiration, the pale yellow coloration of the skin, the fluid drawn in the tapping (dark brown, turbid, colorless, alkaline, specific gravity 1.012) the stools containing considerable fatty matters—that the growth was located in the pancreas.

The incision for its removal was from the ensiform cartilage to the umbilicus. The tumor was found closely adherent to the omentum, the transverse colon and stomach being bound to the latter by a fibrous attachment several inches long. A ligature was thrown around the attachments and the tumor removed entire, including the tail of pancreas.

The progress of the case was satisfactory in every respect and at the present writing the patient attends to the household duties and has gained several pounds in weight.

Microscopic examination of the specimen shows it to be sarcomatous, although there is evidence of a pre-existing hydatid, shown by the hooklets of that tumor with the cells of the spindle-celled sarcoma. Dr. James also found hydatid débris in the liquid first submitted for examination.—*St. Louis Medical and Surgical Journal.*

NOTES OF A CASE OF CONGENITAL MALFORMATION OF MALE ORGAN. By Edgar W. Robertson, M.D.

ONANCOCK, VA., *Feb.* 23, 1890.

Just received a narrative of a congenital malformation of infant male organ, in which case there is alleged to be no meatus, and end of the penis "seems cut off." (Child born 7 A. M., I found upon arrival, about 3 P. M.)

Found the case pretty much as described, but the mother first objected, for sympathetic reasons, to any manipulations or operations, but finally she and the father consented. By my probe and tightening the end of penis, found a urethral bulging, a cap, as it were, to the otherwise end of urethra; and being thus barricaded by this membrane, I made a slit with my scalpel, and subsequently slit upwards, causing slight hæmorrhage, only few drops, and then ascertained that the probe could be shoved down. Then entered my smallest silver (male) catheter to bladder. Withdrawing catheter, for no urine had flowed through it, out came yellow urine, and subsequently a long, straight stream, thus showing bladder power. I ordered it to be kept washed and greased for obvious reasons.

I find no similar case mentioned either by Druitt or Erichsen, but I do in Smith's "Operative Surgery," p. 529. He says:

"II. DEFECTS.

"1. Imperforate urethra may consist of a closed meatus, which must be opened by puncture or incision," etc.

So then my treatment was according to authority.

SANITARY.

THE ACTION OF CLIMATES OF ALTITUDE IN AFFECTIONS OF THE CHEST.—The report of Leudet, to the International Congress of Hydrology and Climatology, has been recently published. It is an able and exhaustive production, whose results we can only summarize.

Leudet starts from the conclusion, which no one will dispute, that neither the bronchitic nor the phthisical ought to live in confined air; that both should habitually breathe the pure and vivifying air of outdoors. If the air is the *pabulum vitæ* for the well man, *a fortiori* it is so for the valetudinarian.

The low density of the air is the first and most important factor of the climates of mountains. The oxygen is rarefied, its tension is lessened; what will result from this for the well man and the sick man? A sort of abstinence-regimen, which anæmiates the former, which calms and fortifies the latter. Jourdanet calls this condition due to rarefied air, *anoxhæmea*, and declares it to be antagonistic to phthisis pulmonalis in that it lessens the activity of the organic combustions. The elevated station, moreover, furnishes an atmosphere which, if not absolutely deprived of microbes, is inimical to their growth and multiplication, and when the consumptive seeks a climate of altitude, he places himself in the best possible environment for the successful struggle between the cells of his organism and the "virus ferment," the morbific bacteria which have grafted themselves upon and are destroying his tissues.

Apart from the density of the air, which is, and which must remain, the specific conditions of altitudes, there is nothing characteristic in the other qualities of the atmosphere of mountains. The purity of the air, its dryness and its immobility, its clearness and its freshness, are met with by the seaside and in vales as well as on the mountains. These are commonplace qualities whose hygienic and therapeutic value is as ill-defined as it is difficult to appreciate.

If the air is dry and keen in the mountains of Switzerland, at the same altitude it is damp and heavy in the Pyrenees. A moist and warm atmosphere may have as beneficial an action on the bronchitic and consumptive as a limpid, clear and cold atmosphere. Nothing is more variable, nothing is more inconstant, than the meteorology of the mountains; nothing is less absolute than the medical indications derived from the thermometric, barometric, hygrometric, or anemological averages and probabilities. All the factors of a climate represent themselves immediately on the apparatus which enregisters them, but a patient does not conform to external influences like an instrument of precision. A phthisical patient, indifferent to-day to a feeble elevation of the temperature, or to an intense solar radiation, may be badly impressed to-morrow by these same agents, and the reactions which he manifests, instead of being salutary, will prove morbid.

Leudet insists at some length on the multiple forms of pulmonary phthisis, on its periods of acuteness or of calm, which alone, in the treatment of the disease, command the prophylactic and curative indications. There are two great classes: The irritable, the congestive and the hæmoptoic, on the one hand; the indolent of temperament, the victims of catharral and slow suppurative processes, on the other. Those who belong to the first class (the feverish and irritable) will be injured rather than benefitted by an exciting climate and a perturbing hygiene, while those who are suffering from the inactive and slow forms will find themselves speedily made better by such influences. The former need to be protected rather than fortified.

Leudet terminates his report by the following conclusions:

1. The climates of altitudes have, on the affections of the chest, an incontestable action; all powerful when it is a matter of *preventing*; relative or *nil* when it is a matter of *curing*.

2. When the disease is infectious and virulent, they are great modifications of the culture soil (*terrain*); they do not touch the germ; they do not destroy the ferments.

3. Their *immunity* relative to pathogenic germs is neither real nor absolute; it is accidental and contingent.

4. Their vivifying and tonic action seems to depend on multiple conditions, some of which, like the freshness and the purity of the air, its transparency and its immobility, have an incontestable importance, and of which, one only, the rarefaction of the air, is really specific.

5. The *delicate* of bronchi and of lung, those menaced by and predestined to phthisis, will derive a decided benefit from a prolonged sojourn on high table-land and mountainous regions, providing that they are not irritable, and that they have been methodically trained to live in the climate of mountains.

6. The confirmed tuberculous may, with advantage, pass the winter in the Sanitaria of Switzerland, provided that they are neither congestive nor hæmoptoic, and that they are strong enough to devote themselves every day to gymnastic exercises which require a keen and bracing air.—*Medical Age.*

THE MORTALITY FROM TUBERCULOSIS AMONG NURSES.—Dr. George Cornet has published, in the *Zeit. f. Hygiene*, Bd. vi., Heft 1, f. 64, a study of the mortality rates in the population of towns and cities compared with the mortality among trained nurses, almost 75 per cent. of whom belong to religious orders. In 38 cloisters, having a yearly service averaging 4,028.8 Sisters, the aggregate service was 87,450 patients during the twenty five years that the statistics covered. During this period the mortality was 2,099; of this, 1,320 deaths, or 62.88 per cent., were from tuberculosis; 177, or 8.23 per cent., from typhus fever; and the other contagious diseases caused but a small fraction of the mortality.

The most important evidence in the paper is on the contagiousness of tuberculosis. An elaborate table shows the mortality from tuberculosis compared with that from other diseases, demonstrating that the mortality rate of the former attains its maximum between the twenty-fifth and fortieth years, declining in the subsequent decennial epochs. Comparing the death-rate from tuberculosis among nurses with that of the entire population, it is shown that between the ages of fifteen and twenty the mortality among the former class is six times greater than in the latter; between twenty and thirty, it is over four and a half times greater among nurses; between thirty and forty, it is almost three and a half times greater. It is true that other contagious diseases exhibit the same increase of mortality among nurses during the years mentioned; but, as shown above, their disparity is small when compared with tuberculosis.

Among nurses the expectation of life at the age of seventeen is only 19.67 years, while in ordinary life the expectation at this age is 41.17 years. At twenty years the probability of life for a nurse is almost the same as that for an ordinary person aged fifty-two years.

The sanitary conditions of the hospitals varied greatly; in fifteen out of twenty-one hospitals tubercle bacilli were found on the walls and furniture. As former experiments of this author have shown the dissemination of the tubercle bacilli by the air, the excessive mortality from tuberculosis among nurses would seem to be due to contact and the neglect of the ordinary means that should be employed to prevent the spread of the disease.

As his data are the first that have been compiled on so extensive a scale, and allow a comparison of the prevalence of tuberculosis among persons more or less constantly exposed to the disease with the prevalence of this disease among the people at large, it is to be hoped that they will be carefully considered by the members of the profession that still consider the contagiousness of tuberculosis as a question *sub judice.*

THE PURIFICATION OF THE MILK SUPPLY.—Our readers doubtless share the interest which recent contributions have excited in the matter of the influence of the milk supply upon infantile mortality. We have endeavored to lay before them the results of the most mature reflections of our exchanges; and in continuation of this effort we now refer to a recent "hygienic word of warning," by Dr. Schmidt (Archiv. f. animal Nahrungsmittelkunde).

"Is the wholesale murder of our infants by the summer decomposition of cow's milk an inevitable fate?" asks Dr. S., and he answers the question in the negative.

In order to deprive the milk supplied to the people of its universally dangerous character (it may contain seven millions of bacteria in each cubic centimeter) without increasing its cost, the following excellent propositions are made by the author:

1. The stables should be kept scrupulously clean, and the health of the animals supervised by veterinary authority. The animal, especially the udder, should be carefully cleansed; the milk receptacle should be clean, and the stable air pure during milking.

2. The milk should be rapidly cooled and kept from being churned during removal to the consumer, which should be made in the most cleanly vessels. The dealers should be under supervision.

3. The milk should be boiled immediately after its receipts by the consumer, not in large vessels from which it may be dipped out, but in several smaller ones, which should be carefully and quietly kept in a cool place until used. Soxhlet's apparatus is to be commended for the better situated classes. For the poorer people there should be central stations for the delivery of sterilized milk, in order that the small bottles of the latter may be warmed by placing them in water at 40° C. But even without these, even among the poorest people, the infant's food can be decidedly improved by boiling the milk at once in vessels of half a pint, covering it with a clean cover, and allowing to remain absolutely quiet in a cool place.

Every city should establish a commission consisting of a hygienist, a veterinarian and a chemist, who should guard the milk supply in the above manner.

Sooner or later our health authorities must come to an appreciation of the fact that in the milk supply lurks the unseen enemy who annually slaughters our innocents. To dislodge him from this stronghold appears a much easier task than the caring for the thousands of pale-faced and shrivelled infants who every summer demand the tireless efforts of an additional sanitary corps and of the benevolent devisors of seaside hospitals and excursions.

Obsta principiis is an old maxim in medicine.—*Deutsche Gazette.*

STATISTICS OF YELLOW FEVER MORTALITY.—At the Medical Congress which has recently been held in Cuba, Dr. Weiss read an important paper on the statistics of yellow fever mortality. He pointed out the serious fallacies into which one may fall by judging of the efficacy of any treatment by the published mortality in any small number of cases, more especially when these are taken all together as they occur, perhaps in the course of one or two months. Not only is it important for scientific purposes to record a large number of cases spread over a lengthened period and embracing several outbreaks of the disease, but it is most necessary to state both the exact form the fever takes and the day on which treatment was commenced. As an example of the diversity of published death-rates, he mentioned that in the

Hospital San Filipe y Santiago the mortality under Dr. Cabrera in July, 1882, was only 5 per cent., whereas in May and June of the same year it was as much as 45 per cent. A comparison made recently between the expectant method and Dr. Sternberg's antiseptic method, the cases being taken during the same epidemic, and being as nearly as possible equivalent to one another, resulted in an identical mortality in the two series—viz., 15 per cent. Regarding the antiseptic method, Dr. Weiss remarked that perchloride of mercury sometimes gave rise to hæmorrhage from the gums, to melæna, and to convulsions similar to those of Jacksonian epilepsy, and that doses of from one-seventh to one-fourth of a grain were insufficient for the purpose of antiseptic treatment; beta naphthol, too, though much less poisonous, has only a sixteenth of the antiseptic power of corrosive sublimate, and it is not well borne by the mucous membrane of the stomach. The mortality amongst the last 300 cases was 25 cer cent., which was considerably lower than the rate for any former year, seeing that since 1882 it had ranged from 32 to 60. This improvement Dr. Weiss ascribed to the greater care taken of the cases, and to the intestinal tract having always been cleared the first or second day by emetics and purgatives.

ADDRESSES.

ADDRESS DELIVERED BEFORE THE NEW YORK COUNTY MEDICAL ASSOCIATION, Feb. 17, 1870.

BY GEORGE TUCKER HARRISON, M.A., M.D.

By a most lamentable event, the duty devolves upon me, of appearing before you this evening as your presiding officer. Need I remind you what that event is? Your saddened countenances bear but too impressive evidence that its memory is present with you. Yes, Charles S. Wood is no more, and in his death, this association has received an irreparable loss. But a month has passed since your suffrages called him to this Presidential chair for a second time. Few of you, who then saw him, imagined that they should never behold his noble and serene countenance again. He was urged by those bound to him by the closest ties of love and affection, not to go to that meeting, as he was visibly failing in health, and symptoms of a threatening character had manifested themselves. But such was his devotion to the interest of this Association, that he felt he must be present, cost what it would of personal sacrifice. With fond anticipations he looked forward to this occasion, when in his address, he would tell you in eloquent terms, what this Association had accomplished in the past twelve months, and, in burning words, would unfold his hopes and aspirations for its future welfare. But it was not to be; his work on earth was done. The language which Carlisle applies to his father is singularly appropriate here. "As for the departed," he remarks, "we ought to say that he was taken home like a shock of corn, fully ripe." He "had finished the work that was given to him to do," and finished it (very greatly more than the most) as became a man. He was summoned, too, before he had ceased to be interesting—to be lovable." The words also, which the great apostle, applied to King David naturally suggests itself. "For David, after he had served his own generation by the will of God, fell on sleep and was laid unto his fathers." And well did our late associate serve his generation! If we follow his career from boyhood to its closing scenes, it will be found that he discharged the duties of life with rare fidelity. Whether we consider him as scholar, teacher, Surgeon in the field in war time, or "in piping times of peace" as active practitioner, or presiding officer of a scientific body, alike in all circumstances he was industrious, faithful and upright. Dr. Wood had an eminently judicial mind, and this, with his extensive knowledge of parliamentary law, rendered him remarkably well qualified for the duties of a presiding officer. He was singularly free from all affectation and had a healthy well-balanced mind. He was very decided in his convictions, and expressed his opinions fearlessly, but there was no bitterness in his judgments. With special predilection, he devoted himself to the study of surgery, and physiology and medical jurisprudence. He was not a voluminous writer, and the contributions to medical literature from his pen were of a practical character. He was a man of modesty and true dignity. Above all, religion was his pole-star, and kept him true in all the distractions and vicissitudes of life. In the noble words of Lord Bacon, we may say as applicable to him, "He that dies in an earnest pursuit, is like one that is wounded in hot blood, who, for the time, scarce feels the hurt; and therefore a mind fixed and bent upon somewhat that is good, doth avert the dolors of death; but above all believe it the sweetest canticle is *nunc dimittis* when a man hath obtained worthy ends and expectations. Death hath this also, that it openeth the gate to good fame, and extinguisheth envy; *extinctus amabitur idem.* When dead the same person shall be beloved." A retrospective glance at the work done by our Association, during the past year, affords abundant proof of gratifying progress. The report of the corresponding and statistical secretary shows that there were two hundred and fifty-nine names on the roll, one year ago. Six of these, during that time, removed from the County and State. Six others died. In this time, we have added one hundred and eighty-three new members, making our roll number four hundred and thirty members at the end of the year. A number of excellent papers have been read before the Association within the past year, and the discussions upon them as a rule, has been marked by thoroughness and earnestness. The large attendance upon the meetings fully attests the interest of the Fellows. The report of the treasurer, too, furnishes tangible proof in another way of the continued interest of the Fellows, in the success of our organization. Let not this success be an inducement to supineness, but on the other hand, let it be an incitement to put forth greater effort to increase the power and usefulness of this Association. The end to be achieved, if we keep in view the objects it is designed to attain, are surely high and noble, and should enlist our hearty support. In order to attain this, each individual member should feel it a point of honor, to do what he may to promote its prosperity in a spirit of unselfish devotion. It has been said that this is the age of gross materialism, with the predominance of self, but every now and then the dull plain of selfish uniformity is illuminated by the lightning flash of some high and heroic deed which thrills the heart of humanity, showing in vivid light that self-sacrifice and self-denial in the interests of others still exists, and so may it be the good fortune of this Association that such a spirit among its members, if dormant now, shall be quickened into life.

PHARMACY AND THERAPEUTICS.

Local Application of Chloroform in Epididymitis —Dr. Theodore Clemens, of Frankfort, in an interesting paper communicated to the *Allgemeine Medicinische Central Zeitung*, describes the great benefit he has obtained in cases of epididymitis, both specific and non-specific, by means of chloroform locally applied. He regards as most unsatisfactory the treatment of the affection by other methods as compared with his own, which he has employed now for a great many years. It consists in laying some cotton wool saturated with chloroform and spirit at the bottom of a large glass vessel, into which the genitals are then put and packed round with dry cotton wool, the buttocks and thighs forming a cover, this application being continued for from fifteen to twenty-five minutes, and repeated two or three times a day. Pathologically, he considers venous congestion of the epididymis and the cord through retention of the semen a predisposing cause of the disease. He also considers epididymitis as very likely to occur when gonorrhœa has been contracted in excessive venery. He mentions a case of treatment by chloroform, thirty-six years ago, not of epididymitis, but of periodical "heat" occurring in the human subject. The man used to suffer periodically from a form of orchitis, during which the testes felt hot and swollen, and the plexus pampiniformis was full and turgescent like a varicocele. He was ordered the local application of chloroform three times a day, from fifteen to twenty-five minutes each time, but the first time he bore the chloroform for nearly thirty-five minutes, after which the pain of the severe attack completely ceased and the swelling considerably decreased. This treatment lasted three days, during which time he was able to walk about, the cotton wool which had been used for the chloroform being put into the suspensory bandage and the testes covered with it. After that both the swelling and sensibility disappeared. Another case is mentioned, where epididymitis had been caused by the continuous pressure of a rudder handle on the hypogastrium, in which similar treatment proved entirely successful. Again, a class of case that is usually very difficult to treat—viz., that of gonorrhœal orchitis—seems to have proved fairly tractable when managed with the help of chloroform. Here one of the first signs of improvement was frequently the re-establishment of an old discharge, which was soon cured simultaneously with the epididymitis.—*Lancet.*

IN the treatment of fetid bronchitis, Prof. Da Costa recommends full support, cod-liver oil and carbolic acid, both by inhalation and internally.

IT is stated that one grain of pilocarpine in a half ounce of vaseline applied to the scalp will prevent baldness.

THE CONTINUOUS USE OF BLUE MASS IN SMALL DOSES.—The patient was a man of large frame, about fifty-five years of age, whose occupation or habits prevented him from getting sufficient sleep, as he rose each morning by 4 or 4:30, although he did not retire until 11 P.M. Evident signs of heart failure began to show themselves about a year ago, with dyspnœa on exertion, difficulty in going up-stairs, or lifting weights, increasing œdema and albumen in the urine without casts. He had been treated in various ways, chiefly by iron in conjunction with diuretics, as acetate of ammonia or nitrate of potash. The symptoms steadily increased until the œdema invaded the trunk and genitals, and he was almost confined to his room. When he came under treatment repeated trial was made with similar remedies, but finding no good result, and that the digestive system was in fairly good condition, the following pill was ordered :

℞
Mass. hydrargyri
Pulv. digitalis
Cinchonidiæ sulph. . . . āā gr. xl.
Fiat mass. et div. in pil. No. xl.
Sig. : One pill three times a day.

These pills were begun November 10th, and were continued regularly until November 22d, by which time the full number had been taken. He was also ordered to remain in bed until 7 o'clock each morning, thus securing at least eight hours' rest. During the day he was directed to lie down for one hour.

The only appreciable action of the remedy was a steadily improving tone of cardiac action with increased secretion of urine, with diminished proportion of albumen, and progressive decrease of œdema. By November 22d all the symptoms had disappeared, the urine was free from albumen, and the œdema was entirely gone. There had been no purgation, and no evidence of mercurial action. The change in his appearance was extraordinary, as he seemed shrunken away, showing that the entire body had been infiltrated with serum. He felt weak, but the only remedy ordered was an ounce of whisky twice daily. Upon this he has rapidly regained his strength, and now seems in very good condition and ready to return to work.

I have in some cases of general œdema, both with weak heart and with organically diseased heart, given the above combination for much longer periods than in this case, and with remarkably good results, but in other cases it becomes necessary to suspend very soon, chiefly owing to gastric disturbance. If the mouth is frequently washed with a solution of chlorate of potash, there does not seem much danger of ptyalism; but a constant close watch for this should be kept up. The remedies should always be joined with carefully regulated hygiene and diet.—*University Med. Mag.*, Jan., 1890.

ADVANTAGES OF PEROXIDE OF HYDROGEN AS A SOLVENT FOR THE MEMBRANE OF DIPHTHERIA.—Hydroxyl possesses the following advantages:

It offends neither the sense of taste nor smell—being tasteless and odorless.

When applied locally, it causes no irritation and occasions no pain.

When swallowed, it is harmless, as it is not poisonous.

It is a powerful antiseptic and deodorizer.

It in no way precludes the simultaneous use of any other local remedy.

It is a perfect solvent for the exudate of diphtheria. When used locally, the membrane seems to corrode, and comes away in fragments of a more or less porous character.

In nasal cases, it keeps the nose free from membrane, and gives the bichloride, or other solution, a chance to act.

In the most offensive cases, it deprives the discharges of their unpleasant odor.

I generally commence its use as a 60 per cent. solution, increasing to the full strength of the so-called "ten volume" peroxide of hydrogen. When used internally, the dose is one-half to two drachms.—George W. Major, in *Montreal Medical Journal.*

SUNFLOWER IN MALARIA.—Competent Russian physicians assert that the sunflower seed is an excellent substitute for quinine. A crude tincture of the flowers of the common sunflower (helianthus annus) made by filling a flask with the dry or fresh flowers and stems finely cut, covering them with vodka (aqua vitæ or brandy), and leaving the tightly corked flask in the sunshine or in a warm place two or three days. It is used for malarial fever by the Russian, Persian and Turkish peasantry. The dose is a wine-glass full three times a day.—*St. Louis Medical and Surgical Journal.*

TREATMENT OF PNEUMONIA.—Cantani, of Naples (in the *Inter Kl. Rundsch.*), gives the results of his experience in the treatment of pneumonia. If the disease runs a regular course, he gives only a simple diuretic, and applies poultices to the chest. An abundance of fresh air he considers of great importance. If the expectoration is viscid he uses alkalies; if it is scanty, small (five grains), doses of ipecac. If the heart becomes weak, alcohol, ether, spts. ammon. arom., or quin. valerianat., are indicated. When the expectoration becomes mucopurulent, he advises inhalations of turpentine, and use of the carbolic spray. The cold bath he employs in cases of hyperpyrexia only. He finds, however, that whenever it is used, it assists expectoration. He is opposed to the use of antipyretics, on the ground that they weaken the heart. He advises venesection in cases of œdema of the lungs. He disapproves of blisters; but in adynamic forms he employs mustard plasters, except in children, where he fears that nervous symptoms will result from absorption of the muscles.

A NEW ANTISEPTIC.—Under this title a paper was read before the Medical Society of London, on November 4th, by Sir Joseph Lister. The antiseptic is the double cyanide of mercury and zinc, and is prepared as follows:

A soluble double cyanide of mercury and potassium is dissolved, and to it a soluble salt of zinc is added; the precipitate formed is the double cyanide, which should be well washed with water to free it from any soluble cyanides, as they cause irritation and suppuration if placed on a wound in the shape of gauze.

One in 2,000 of double cyanide keeps blood serum and corpuscles from putrefaction, but if the wound has developed bacteria a much stronger solution or powder or gauze must be used. In other words, the double cyanide has a strong inhibitory but a weak germicidal power. Gauze is prepared in the following way: The double cyanide is triturated with starch, and water is added to this, the result being a somewhat leather-like mass. The water is strained off, and to the mixture of double cyanide and starch sulphate of potassium is added. This enables the mixture to be easily powdered, and, when it is dry, it is a fine white powder. In order to fix this powder on gauze, 3 per cent. or 5 per cent. of it is suspended in a 1 in 4,000 solution of mercuric chloride, when, by the agency of the starch, it sticks so firmly that it cannot be washed off except with difficulty.

Sir Joseph Lister said that the dressings should be used moist, and he had a little contrivance which he employed to show the surgeons present how they might prepare the gauze themselves, as he had made it a point that the gauze should be made as required. The exact composition of the double cyanide is uncertain, and is being investigated in the Pharmaceutical Research Laboratory.

COCOANUT AS A VERMIFUGE—Paresi, of Athens, when he was in Abyssinia, happened to discover that ordinary cocoanut possesses vermifuge qualities in a high degree. He took, one day, a quantity of the juice and pulp and shortly afterward felt some amount of gastric disturbance, which, however, passed off in a few hours. Subsequently he had diarrhœa and was surprised to find in the motion a complete tænia, head and all, quite dead.

After returning to Athens, Paresi made a number of observations which are most satisfactory, the tænia being always passed and quite dead. In only one case was the head wanting. He orders the milk and the pulp of one cocoanut to be taken early in the morning fasting, no purgative or confinement to the house being required.—*Lancet.*

A correspondent of the *Times*, of India, writes that the cocoanut has been used as a vermifuge in India for probably forty generations by the beef-eaters of the country, and is so well known there as a means of expelling the flat worm, that he cannot conceive how information of the fact has not reached England before. When properly prepared and intelligently administered, so says the writer, the cocoanut is equally efficacious with male fern oil, kousso, pomegranate root, or turpentine, while it is as pleasant to the palate as they are offensive.—*Medical Age.*

MENTHOL IN ACUTE RHINITIS, INFLUENZA, AND OTHER AFFECTIONS OF THE NOSE AND THROAT.—It may be of value to my professional *confrères* at the present juncture to know that the vapor of menthol checks, in a manner hardly less than marvelous, acute colds in the head, and is also to be recommended with a certainty of success, if used on its first onset, in arresting or as a preventive of infection in epidemic influenza, and this even for cases in which the nasal symptoms commonly associated with the influenza are not manifested.

Menthol exerts its action in the following manner:

1. It stimulates to contraction the capillary blood-vessels of the nose and throat, always dilated in the early stages of head cold and of influenza.

2. It arrests sneezing and rhinal flow.

3. It relieves, and indeed dissipates, pain and fulness of the head by its analgesic properties, so well known by its action when applied externally to the brow in cases of *tic douloureux*.

4. It is powerfully germicide and antiseptic. It thus kills the microbe of infection and prevents its dissemination.

The remedy may be employed by means of a general impregnation of its vapor through a room or house, or locally to the nostrils and air-passages: for both which purposes there are several methods.

(*a*) A 10 to 20 per cent. solution of menthol in almond oil, in liquid vaseline, or in one of the many other odorless parafin compounds, can be sprayed into the nose or throat, or about a room.

(*b*) By placing twenty or thirty grains in an apparatus specially designed by Rosenberg for administering the drug in cases of laryngeal consumption by inhalation, in the form of vapor mingled with steam.

(*c*) By placing a similar amount or one to two drachms of the oily solution in a Lee's steam draft inhaler, or bronchitis kettle.

(*d*) By a simple arrangement adopted by a gentleman with whom I am acquainted of placing a saucer of water containing a similar quantity of the crystals over a gas-burner in the hall, by means of which the whole house is kept constantly permeated with the drug.

Since the invasion of the epidemic of influenza in this city I am having the out-patient department of the Central Throat and Ear Hospital disinfected in this way.

(*e*) But by far the most convenient method for personal use is to carry always the ingenious pocket menthol inhaler known as Cushman's which should be used not only on the first approach of an attack, but three or four times a day during an epidemic, and always in cold-catching weather by those subject to head colds.

The instrument consists of a glass cylinder, four inches in length, half an inch in diameter, and open at both ends. The tube contains crystals of menthol closely packed and prevented from escape by perforated zinc and cork. The opening at one end is twice the size of the other, the larger being intended for inhalation by the mouth, the smaller for the nostril. The latter is the method which I by preference recommend. It is not to be simply smelt, but well sniffed or inhaled, so as to cause some tingling or smarting, a sensation which is quickly followed by that of coolness, and openness of the previously "stuffed" and heated nostril.

Dr. Bezley Thorne, in his interesting communication to the current issue of the *Lancet* mentions that in one case of influenza under his care "there was intense *mal de mer*, accompanied by frequent retching." I may say in this connection that I have found the menthol inhaler exercise a marked beneficial effect in cases of genuine seasickness, and especially in the headache and vertigo which remain after actual vomiting and retching have passed off.

In conclusion, I may say that my experience of menthol is of no recent date. I have employed it for the last three or four years with the greatest success for relief of the pain and distress occasioned by phthisical and other ulcerations of the throat and larynx.

Two days ago only, I advised it for a patient brought to me by Mr. Winterbotham, of Cheltenham, on account of cancerous ulceration of the tonsil, floor of the mouth, and root of the tongue. In this instance cocaine had occasioned greater discomfort by reason of increasing the excessive salivation characteristic of the disease than the relief it afforded to surface pain. I have also employed menthol with advantage in the form of nasal spray or brush application in diphtheria. For all forms of nasal disease causing obstruction to the natural breath-way I prescribe the menthol inhaler to the extent of hundreds per annum. By its use, when the nasal discharge is excessive it is checked; when deficient and thickened, as in hypertrophic rhinitis, its healthy character is restored; and when arrested inspissated and malodorous, as in atrophic rhinitis, fluidity is promoted and the foul smell corrected.—J. LENNOX BROWNE, *Medical Press and Circular.*

CODEINE IN ABDOMINAL PAIN.—The fact that many practitioners still prefer opium to morphine in the treatment of abdominal pain, led Lauder Brunton to question whether some other alkaloid than morphine was not more powerful in cases of this sort. Barbier, in 1834, found that codeine had an especial action in lessening pain from irritation of the solar plexus, while it did not disorder digestion and rather aids the action of the bowels. Brunton has employed it with success, especially in painful affections of the intestine and lower part of the abdomen. It is particularly valuable where morphine is to be avoided on account of the condition of the heart or lungs, or where it is desired not to interfere with the action of the bowels; on the other hand, where there is much diarrhœa it is not so serviceable as morphine or opium, because it does not lessen peristaltic movement. The dose employed is half a grain in pill.—*Boston Medical and Surgical Journal.*

TANNIN TREATMENT OF PHTHISIS.—Dr. E. Houze, of the Hospital St. Jean, Brussels, after having tried the tannin treatment on all his phthisical patients for the last year and eight months, states as the result of his observations that it gives excellent results in all stages of the disease, and especially in the condition where cavities exist. Indeed, he has no hesitation in declaring that of all the different kinds of treatment for phthisis which he has tried this has given by far the most encouraging results. The dose he employs ordinarily is fifteen grains, which quantity is taken three times a day. It is, as a rule, well borne; where this is not so, it is ordered to be taken with meals. After the first few days the expectoration and the sweats diminish, the cough decreases, and in many cases the appetite undergoes a marked improvement. The majority of the patients suffered from some slight degree of constipation, though in some this feature was sufficiently marked to require treatment; while others, again, suffered from diarrhœa. The character of the expectoration changed for the better, the sputa becoming white and frothy instead of green and firm. In some cases the diminution of the expectoration was followed by increased dryness of the cough, so that the patients complained that it fatigued them more; this was easily remedied by prescribing a few spoonfuls of syrup of codeia. The physical signs underwent a remarkable change for the better, at least those depending on auscultation, moist rales giving place to dry rhonci, and large gurgling rales decreasing progressively until they gave place to mere blowing respiration. These changes were evidently due to the drying up of the cavities, in consequence of which the hectic present in many of the cases vanished, the patients increasing considerably in weight and gaining strength in a remarkable manner. The percussion signs were not found to undergo so marked a change as those dependent on ausculation, but even here some improvement could be detected. No bacteriological observations were made.

ORIGINAL CORRESPONDENCE.

ROXBURY, N. Y., *March* 1, 1890.

DEAR DR. THOMAS:

This may or may not interest you. February 5th I was called by a neighboring practitioner in consultation to operate on a supposed hernia.

When we examined it we were both in doubt as to what constituted the tumor, but something was strangulated. She was put under ether, and I carefully felt my way with a scalpel down to the tumor, when lo! instead of omentum or bowel, it was the ovary. It could not be replaced, so I put a double catgut ligature through, I *presume*, the Fallopian tube, tied it, and removed the ovary. Washed the wound out with carbolized water, stitched it up carefully, dressed it antiseptically, and let it go.

This is my first ovariotomy, and, strange to say, she is doing well. From the history of the case, I should judge this hernia of the ovary has been in existence for five or six years, and treated for hernia of the intestine, with a truss, and has been reduced until this time. I see in your book you say it is very rare, and that is the reason I write you. I requested the doctor to report it.

Fraternally, S. S. CARTWRIGHT.

To Dr. T. G. Thomas, N. Y.

MEDICAL SOCIETY OF THE STATE OF NEW YORK,
ALBANY, N. Y., *March* 1, 1890.

Editors GAILLARD'S MEDICAL JOURNAL:

Dear Sirs: For the information of all concerned, I desire to state that the Medical Society of the State of New York offers a prize of one hundred dollars, payable from the Merritt H. Cash Prize Fund, for the best original essay on any medical or surgical subject.

The conditions are: That the competitors shall reside in the State of New York; that the essays shall be either printed or type-written; that each essay shall be designated by a motto on the title page; that a correspondig motto, together with the name of the writer, shall be enclosed in a sealed envelope and attached to the essay; and that all essays shall be sent to the Chairman of the Committee on Prize Essays, Dr. George F. Shrady, New York, prior to January 1, 1891.

Drs. Daniel Lewis, of New York, and Eugene Beach, of Gloversville, are the members of the Committee.

F. C. CURTIS, *Secretary.*

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110 West 34th Street.
NEW YORK, March 7, 1890.

Editors GAILLARD'S MEDICAL JOURNAL:

Dear Sirs: I am directed by the Secretary General of the Tenth International Medical Congress to give the greatest possible publicity to the circular, the main points of which I herewith transmit to you with the request that they be published.

Very respectfully yours,
A. JACOBI, M.D.

INVITATION FOR AN INTERNATIONAL MEDICAL AND SCIENTIFIC EXHIBITION.

In connection with the Tenth International Medical Congress, to be held in Berlin, between the Fourth and Tenth of August, there is to be an International Medical and Scientific Exhibition. The exhibits will be of an exclusively scientific nature, as follows:

New or improved scientific instruments and apparatuses for biological and strictly medical purposes, inclusive of apparatuses for photography and spectral analysis, as far as applicable to medicine.

New objects and preparations in pharmacological chemistry and pharmacy.

New foods.

New or improved instruments subservient to any of the departments of medicine, including electrotherapy.

New plans and models for hospitals, convalescent homes, and disinfecting and bathing institutions and apparatuses.

New arrangements for nursing, including transportation, baths, etc.

New apparatuses in hygiene.

Applications or inquiries inscribed "Ausstellungs-Angelegenheit," and accompanied with a printed card containing the name and address of the firm thus applying, ought to be directed to the Secretary General, Dr. O. Lassar, Carlstrasse, No. 19, Berlin, N. W., Germany.

R. VIRCHOW, President.
E. VON BERGMANN, E. LEYDEN, W. WALDEYER, Vice-Presidents.
O. LASSAR, Secretary General.

REVIEWS.

DIAGNOSIS OF DISEASES OF THE BRAIN.—By W. R. Gowers, M.D., F. R. S., Professor of Clinical Medicine in University College, Physician to University College Hospital, and to the National Hospital for the Paralyzed and Epileptic. Philadelphia: P. Blakiston, Son & Co., 1012 Walnut St.

It is very difficult to criticise a work for which nothing but praise can be uttered. Comparatively few are fortunate enough to come in personal contact with this eminent authority, to hear his lectures and thus enrich their supply of knowledge from such a precious source, but all can study his works and they will be well repaid for the time spent in so doing. This volume, of 250 pages, is made up of eighteen lectures delivered by the author at the University College Hospital, London. Like his other productions it is plain and explicit, and is certainly as simple as any work upon this subject could possibly be. The first three lectures, forty-six pages, are devoted to the medical anatomy of the brain. From this the author passes on to the symptoms of the different diseases of the brain, the mechanism of their production and their classification. To the consideration of these subjects nine lectures have been given. Lectures XIII. and XIV. are devoted to localization, and in the last four lectures the author treats of pathological diagnosis, the most interesting part of this very interesting book. Of course, a work upon a special subject is of most interest to the one who has taken up that subject as his specialty; but, at the same time, no general practitioner can afford to be without some knowledge of diseases of the nervous system, and to such ones, and to those who are just entering the field of neurology with the view of making it their special work, we particularly recommend this book.

WOOD'S MEDICAL AND SURGICAL MONOGRAPHS. William Wood & Company, Publishers, 56 and 58 Lafayette Place, New York. Vol. IV., No. 1, October, 1889. Contents: The Influence of the Male Element Upon the Female Organism. By John Brown, M.D. The Internal and External Temperature of the Human Body, as Modified by Muscle-Kneading. By A. Symons Eccles, M.B. The Diseases of the Breast. By Thomas Bryant, F.R.C.S. Vol., IV., No. 2. Aids to Ophthalmic Medicine and Surgery. By Jonathan Hutchinson, Jr., F.R.C.S. On the Surgery of the Knee-Joint, and the Responsibility placed on the Physician and General Practitioner by Modern Progress of Surgery. By C. B. Keetly, F.R.C.S. Bacteriological Technicology for Physicians. By Dr. C. J. Salmonsen, Copenhagen, Denmark. Vol. IV., No. 3. A Practical Treatise on Baldness. By George T. Jackson, M.D. The Sphere, Rights and Obligations of Medical Experts. By James J. O'Dea, M.D. Pathology and Treatment of Ringworm. By Geo. Thin, M.D. Notes on Dental Surgery. By J. Smith M.D., LL.D. On Sounding for Gall-Stones, and the Extrusion of Gall-Stones, by Digital Manipulation. By Dr. George Harley, F.R.S.

A careful perusal of these monographs embraced in this volume, will richly reward the practitioner, as he will gain a variety of valuable information he will seek in vain, by reference to ordinary text-books. We desire to direct attention especially to the excellent monograph of Mr. Bryant, on the Diseases of the Breast. It is a most excellent presentation of the subject, whether regarded from a pathological, diagnostic, or clinical point of view. Dr. George Harley's monograph on Sounding for Gall-Stones, etc., like everything from his facile pen, is well worthy of careful perusal. In conclusion, we cannot do a better service to every man who practises medicine, than by calling his attention to these valuable publications.

HANDBOOK OF PHYSIOLOGY. By W. Morrant Baker, F.R.C.S. and Vincent Dormer Harris, M.D., London. Twelfth Edition. New York: William Wood & Company.

This is the Twelfth Edition of Kirk's Physiology, and has been rearranged, revised, and rewritten, with additional illustrations. Especially to be commended are the chapters on the Physiology of the Nervous System, which treat the subject with a fulness of detail, leaving little to be desired. When a work of the significance of this has been through so many editions, it may well dispense with the ordinary terms of literary criticism, and it is scarce necessary to commend it to the attention of medical students and practitioners.

A HANDBOOK OF THERAPEUTICS. By Sidney Ringer, M.D. Professor of the Principles and Practice of Medicine in University College; Physician to University College Hospital. Twelfth Edition. New York: William Wood & Company, 56 and 58 Lafayette Place, 1889.

This edition has been carefully revised, and fully sustains the reputation it has already acquired. The article on Digitalis and its preparations is very full and satisfactory. We cannot agree with the distinguished author, in the estimate he places upon the value of Aconite, in controlling inflammation and subduing the accompanying fever. And, even if it were the valuable remedy he claims it to be, it is too dangerous to be generally employed.

AN ELEMENTARY TREATISE ON HUMAN ANATOMY. By Joseph Leidy, M.D., LL.D. Professor of Human and Comparative Anatomy and Zoölogy, in the University of Pennsylvania; President of the Academy of Natural Sciences, and of the Faculty of the Wagner Free Institute of Sciences, Philadelphia. Second Edition. Rewritten with four hundred and ninety-five Illustrations. Philadelphia: J. B. Lippincott Company, 1889.

This is one of the most excellent books on Human Anatomy, written in the last ten years—especially the histological descriptions, are written with masterly ability. One characteristic feature of the book is the attempt on the part of the author to improve the nomenclature. As he remarks in the preface, "with the view of facilitating the study of Anatomy and its Commitment to Memory, in the employment of the multitudes of necessary technical terms, as a rule, one name for an organ or part is used, and that one selected which is simplest and most expressive of its character. The name, also, as far as may be permitted, is rendered into English." We see no advantage in substituting English for Latin names. The Latin is common to all nations, and in reading a French or German work, it helps amazingly, if we are familiar with the Latin expressions. The Anatomy of the Nervous System, is lucidly and succinctly described. We can commend this book in the very highest terms to all students of Anatomy.

SYLLABUS OF OBSTETRICAL LECTURES. By Richard C. Morris, M.D. Philadelphia: W. B. Saunders, Publisher.

THIS little book will be a most valuable aid to the student and practitioner of obstetrics. It is as remarkable for its completeness as for its condensation, giving a full, concise and accurate account of all the best results of modern thought and experience, and presenting the valuable material contained in its pages in a form the least arduous for its acquirement by the reader.

P. BLAKISTON, SON & CO., Philadelphia, will publish about March 15th a new Medical Dictionary, by George M. Gould, A.B., M.D. It will be a compact, one-volume book, containing several thousand new words and definitions, collected from recent medical literature, while the total number of words is beyond that in any similar book. It includes also elaborate and useful tables of the Bacilli, Leucomaines, Ptomaines, Micrococci, etc.; of the Arteries, Nerves, etc., and of the Mineral Springs of the United States, together with other collateral information.

REPORT OF THE SECTION ON PRACTICE OF MEDICINE. 1. The Relation of Dusty Occupations to Pulmonary Phthisis. 2. The Present Aspect of the Question as to the Etiology of Pneumonia. 3. The More Recent Treatment of Pulmonary Phthisis. By William B. Canfield, A.M., M.D., Chief of Chest Clinic, University of Maryland. 1889.

PROFESSIONAL ATMOSPHERE AND MORALS; OR PATENTS AND SECRETS VS. LIBERAL PROFESSION. Address delivered before the New York Odontological Society, March 19, 1889, at New York Academy of Medicine. By Horatio C. Meriam, D.M.D.

THE AMERICAN ACADEMY OF MEDICINE: Its Objects; Its Signs of Promise and its Obstacles; Its Field of Work; and some Suggestions Looking to an Increase of its Efficiency. By Leartus Connor, M.D., A.B., Detroit, Mich.

ON THE CHOICE OF METHODS IN THE TREATMENT OF UTERINE CANCER. By Reeves Jackson, A.M., M.D., Professor of Gynæcology in the College of Physicians and Surgeons of Chicago, etc.

NINTH ANNUAL ANNOUNCEMENT OF THE UNIVERSITY MEDICAL COLLEGE OF KANSAS CITY. Formerly Medical Department of the University of Kansas City, Missouri.

REPORT OF PROCEEDINGS OF THE ILLINOIS STATE BOARD OF HEALTH. Annual Meeting, Springfield, January 30, 1890, and February 13, 1890.

FORTY-EIGHTH ANNUAL ANNOUCEMENT OF THE ST. LOUIS MEDICAL COLLEGE, Seventh street and Clark Avenue. Collegiate Year, 1889–90.

CONTRIBUTIONS TO ORTHOPÆDIC SURGERY. Ninth Fasciculus. By John Ridlon, M.D., Assistant Surgeon at the Vanderbilt Clinic, New York.

THE CURE OF HERNIA, By the use of the Buried Antiseptic Animal Suture. By Henry O. Marcy, A.M., M.D., LL.D., of Boston. Mass.

A STUDY OF THE PATHOLOGY AND TREATMENT OF INTRA-PELVIC INFLAMMATIONS. By L. S. McMurtry, M.D., Danville, Kentucky.

BIENNIAL REPORT OF THE ALABAMA INSANE HOSPITAL, at Tuskaloosa, for the years ending September 30, 1887 and 1888.

SOME COMPLICATIONS OF CHRONIC ENDARTERITIS. By William Buckingham Canfield, A.M., M.D., Baltimore, Md.

A CASE OF EXTRA-UTERINE PREGNANCY. Operation; Recovery. By L. S. McMurtry, M.D., Danville, Kentucky.

THE EARLY DETECTION OF PULMONARY CONSUMPTION By Wm. B. Canfield, A.M., M.D., Baltimore, Md.

THIRTY-FOURTH ANNUAL ANNOUNCEMENT OF THE KENTUCKY SCHOOL OF MEDICINE. Louisville.

ANOMALIES OF THE OCULAR MUSCLES. Third Paper. By Dr. Geo. T. Stevens, New York.

SEVENTEENTH ANNUAL ANNOUNCEMENT OF THE PHYSIO-MEDICAL COLLEGE OF INDIANA.

ENUCLEATION OF TUBERCULOUS GLAND. By Thos. W. Kay, M.D., Scranton, Pa.

FIRST ANNUAL REPORT OF THE NEW AMSTERDAM EYE AND EAR HOSPITAL.

YALE UNIVERSITY, DEPARTMENT OF MEDICINE (YALE MEDICAL SCHOOL).

MISCELLANEOUS.

HYPNOTISM AND INSANITY.—From the *British Medical Journal* we learn that at the last August meeting of the British Medical Association, Dr. Auguste Voisin, Physician to the Salpêtrière, discussed the treatment of insanity and neuroses by hypnotic suggestion, and on the application of the method to the moral and instinctive perversion of backward and imbecile children. "Catalepsy ought to be carefully avoided," he said, because the hypnotized individual ought to be able to preserve the use of the senses, specially of hearing, but hypnotism was in his experience useful when it was possible to make use only of suggestion. He concurred with Braid that the hypnotic state originated in the nervous system of the hypnotized person. By hypnotism he erased hallucinations and delusions and disturbances of special and general sensation. Suicidal ideas and acute and furious mania disappeared under its influence. The treatment had also succeeded in the mania and agitation observed during the catamenia. Patients in this category had even remained asleep for from six to eight days. The method had also succeeded in dipsomania and morphinomania. Dr. Voisin had also been fortunate enough to cure obstinate cases of onanism in this way; had applied the method *a la moralisation des enfants depraves.* He had thus completely transformed their habits of thought, and had brought them to love the good, whereas they had formerly only loved the evil. He had also succeeded in curing amenorrhœa in the insane, which was a frequent cause of nervous and mental troubles; he particularly insisted upon this point as proving it was possible to influence the sympathetic system.

In the discussion which followed Dr. Yellowlees said his attitude of mind toward this paper was simply one of amazement. There was something that cured mania, banished hallucinations, cured love of drink and morphia, stopped masturbation, improved the memory, made imbeciles wise, and bad folks good; moreover, it cured amenorrhœa, and the patient menstruated as directed. It resembled nothing so much as the waving of a conjuror's wand, and saying to disease, "Begone!" Moreover, in nine-tenths of the cases the cure was permanent. If all this were true, their vocation was gone, and they must seek some other profession. Dr. Voisin must not deem them disrespectful if they were a little incredulous as to these wonderful results. It might be that there was something in the vivid Gallic nature that we had not here, or something in Dr. Voisin's method that they did not know. Certainly they had seen no such results from hypnotism here, and certainly he had never heard of results so amazing as those enumerated. in Dr Voisin's paper.

Remarks were made by various other members, some in the same strain as the last, and others confirmatory of Dr. Voisin's results.

PHYSICAL AND MENTAL CHANGES AFTER REMOVAL OF THE OVARIES AND AFTER EXTIRPATION OF THE UTERUS.—The author's paper is based mainly upon the analysis of a mass of data furnished by the experience of a large number of gynæcologists. In cases in which the ovaries are removed, menstruation ceases at once, or after a short time, in 88 per cent. of them; in 12 per cent. it continues at rare intervals, and in small quantities. This cessation in so large a majority of cases is explained on the theory that the impulse to menstruation proceeds from the ovary, and consequently ceases when the latter is removed. Substitutes for menstruation, or atopomenorrhœa, occurred in very few cases. In about half the cases analyzed, the molimina menstrualia still recurred, probably in obedience to habit, and recurring irritation of the uterus, proceeding from the proper nerve centres—this causing hyperæmia. The customary phenomena of the menopause were present, in most cases—*hot flashes*, dizziness, leucorrhœa, sweating, etc. As a rule, there was also atrophy of the vagina and uterus. If the uterus was enlarged from myomata or chronic inflammation, it usually became contracted to the normal, or less than the normal size. The general nutrition of the body was improved in most cases, and in 42 per cent. there was decided stoutness. In most of the cases sexual desire was notably diminished: in some it was altogether extinguished; and in a few it remained unaffected. The mental condition suffered deterioration in almost all cases, and it frequently amounted to melancholia. It would seem, therefore, that removal of the ovaries results in a climacteric which, in all respects, is like that which occurs naturally.

After the removal of the uterus, menstruation ceases in all cases, and atopomenorrhœa, to any extent, never occurs. Molimina menstrualia recur regularly for a short time, with pain and annoyance in the abdomen. This is explained by the continuance of ovarian activity, and the reflected pelvic hyperæmia, which still recurs monthly. The removal of the uterus exercises no particular influence upon the genital organs which remain. The vulva and vagina are changed, and so, in the main, are the ovaries; although, after a few years, these gradually undergo atrophy. Ovulation also continues without interruption until the climacteric. The influence upon the general nutrition of the body is usually favorable, although there is not usually that increase of weight which follows removal of the ovaries. Sexual desire is very little influenced as long as the ovaries and the clitoris remain; exceptionally it is diminished or extinguished. As to the mental condition, there was no change in half the cases analyzed; but in about a third of them there was more or less depression, which not infrequently developed into psychoses. In general, the changes after removal of the uterus are less, and of less significance, than after removal of the ovaries.—*Glaeveke, Arch. f. Gyn., Bd. xxxv, H.* I., *Annales of Gynæcology.*

THE conclusions of the Hyderabad Commission are given in an abridged form as presented in the *Journal of Laryngology and Rhinology*, and this is done because there is so much of importance in the various paragraphs that we do not consider it wise to condense them more than has been already done by the journal named. The results arrived at were the following:

"1. Chloroform, given continuously and freely diluted with air causes a *gradual* fáll in the blood pressure, provided respiration is not interfered with, and there is no struggling or involuntary holding of the breath, quiet breathing being almost invariably obtained when the anæsthetic is sufficiently diluted with air. As the blood pressure falls, the animal first becomes insensible, the respiration gradually ceases, and finally the heart. However concentrated the chloroform, it never causes sudden death from cardiac stoppage. The more diluted the chloroform the more gradual is the fall in blood pressure.

"2. With interruption of the inhalation the fall of pressure continues at a rate depending upon the rapidity of the fall before the interruption, and the after-fall is probably due to absorption of a portion of the residue of chloroform in the air-passages.

"3. If the chloroform administration is stopped at an early stage, pressure very soon begins to rise again to normal; but if the chloroform is pushed, there is a period when blood pressure and respiration can no longer be restored spontaneously, although the heart goes on beating.

"4. The respiration sometimes stops completely, and blood pressure rises, respiration commencing again with the rise, if the fall has been very gradual; but, as a rule, if respiration has stopped or become slow and feeble at the time the inhalation is discontinued, and artificial respiration is not resorted to, the fall in blood pressure will continue till death follows.

"5. Struggling and holding the breath disturb the gradual fall of pressure. While struggling raises it generally, it in a dog much weakened from phosphorus, fell every time it struggled. Struggling, accompanied frequently with acceleration of the respiration and pulse, especially if the former be deep and gasping, leads to more rapid inhalation and greater after-fall. The effect of involuntarily holding the breath often causes very sudden fall, with marked slowing of the heart's action. With drawing of the breath the pressure rises, but gasping respiration succeeding, causes very rapid inhalation, with immediate sensibility and rapid fall of pressure, quickly becoming dangerous.

" The combination of struggling and holding the breath and gasping (as in chloroform closely applied to the face, and without sufficient dilution), causes violent fluctuations, speedy fall of blood pressure, dangerous depression, deep insensibility, and early stoppage of respiration, and the after-fall in these cases is rapid and prolonged.

"6. Slight continuous asphyxia, as from pressure upon the neck, or hindrance of chest movements, causes irregular and exaggerated oscillations of blood pressure and slowing and irregularity of the heart's action. If accompanied with gasping respiration it increases the intake of chloroform, and causes a rapid decline of blood pressure.

"7. Complete, or almost complete, asphyxia (forcibly closing mouth or nose, or tracheotomy tube) causes extremely rapid fall in blood pressure, and excessively slow cardiac action, even temporary stoppage, and the tracings resemble those produced by irritation of the cut end of the vagus. This effect of asphyxia is due to stimulation of the vagi and section of both vagi abolishes it, as does atropine (which paralyses the vagus endings).

"8. Experiments in which the vagi were deliberately irritated during anæsthesia show that irritation of the vagi diminishes rather than enhances the danger of anæsthetics. The slowing of the heart and circulation caused by vagus irritation (as in holding the breath in chloroform administration), retards the inhalation of chloroform and its conveyance to the nerve centres, and of itself slowing or temporary stoppage of the heart during chloroform administration is not dangerous. However, in chloroform administration, with the rise of pressure after temporary slowing of the heart and fall of pressure produced by any form of asphyxia, violent action of the heart, and efforts at respiration result, leading to rapid and dangerous inhalation of chloroform, and rapid and dangerous decline in blood pressure. It is the temporary exhaustion of the vagi after stimulation, and not the actual stimulation itself, which is to be feared. During chloroform administration neither holding the breath nor vagus inhibition can be kept up beyond a certain time, and if the chloroform be not removed from the face, one of two things must happen, viz., either great overdosing on re-establishment of respiration, or the rebounding action of the heart, causing acceleration of the circulation, the blood is quickly saturated with chloroform, and an overdose carried to the nerve centres. The commonly held theory that the danger in chloroform administration consists in slowing the heart by vagus inhibition is absolutely incorrect. It is the exhaustion of the nerve which is dangerous, not its stimulation. With a condition in which there is rapid and bounding pulse and high blood pressure, there is increased absorption of chloroform and propulsion to the medulla, more rapid paralysis of the respiratory and vaso-motor centres, and precipitous fall in the pressure. Such a condition is produced in some cases by ether, division of both vagi, or a full dose of atropine. The heart already working as forcibly as possible is unable to prevent by increased work the fall in blood pressure occurring when the vaso-motor centre is paralysed. Direct action of chloroform upon the cardiac tissue is not the cause of the fall of blood pressure when it is inhaled. Indeed, if it had any effect of this kind it would become rather a source of safety than danger.

"9. The effect of artificial respiration, after cessation of the natural respiration, is to cause, first, an alternate rise and fall in the blood pressure, and then a continuous rise, with final restoration of the natural respiration. In a few cases—*e. g.*, a phosphorus dog and a horse which had an enormous overdose—artificial respiration was unsuccessful.

"10. Complete stoppage of respiration always means that an overdose has been administered, and it may have been so great as to produce prolonged inhalation after fall of blood pressure, and render restoration impossible, and it is impossible to say when the latter may not fail. A great deal depends upon the amount of the after-fall. Still, the success of artificial respiration in restoring the blood pressure is, in some cases, very remarkable, even when the heart has ceased beating, and the animal is apparently dead.

"11. The dangers of too vigorous artificial respiration were instanced by rupture of the liver, and in one case the pleural cavity was found full of blood. Irritability of the heart after death was noticed in many cases, but was most marked where ether had been employed. Chloroform, when injected into the heart through the jugular vein, did not cause clotting of the blood as when ether was injected.

"12. Morphine was shown to have no effect in shortening the period which may be allowed to elapse between the cessation of respiration and commencement of artificial respiration. Other drugs used had no effect upon the action of chloroform, except when their own special action became the leading feature.

"13. The Committee proved by a number of experiments that shock, however induced, produced only the action due to stimulation of a sensory nerve, and nothing suggestive of syncope or failure of the heart's action, and chloroform has, therefore, no power to increase the tendency to shock in operations, and in order to test this conclusion still further the vagi were irritated during dangerous chloroform narcosis, and it was found that the inhibition produced prevented rather than assisted the fatal effect of prolonged chloroform inhalation. The danger begins when the irritation is discontinued or fails any longer to inhibit the heart, and thus enable the chloroform in the lungs to be rapidly absorbed and thrown into the system, and this danger is increased by deliberately pumping the chloroform into the lungs by artificial respiration. Other experiments showed conclusively that chloroform does not increase the action of electrical stimuli applied to the vagi. The inevitable conclusion from a number of experiments (Goltz's experiments repeated on dogs, violent blows on the testicle, section of the splanchnics) is, that chloroform has no power to increase the tendency to shock or syncope during operations, and if either of these occur, it prevents rather than aggravates the danger of chloroform inhalation.

"14. Experiments upon dogs dosed with phosphorus showed that fatty heart is not affected by chloroform, and shock could not be more readily produced in these animals than in healthy ones. Chloroform in no way endangers a fatty heart, but by lowering the blood pressure lessens the work such a heart has to accomplish. Such patients die from very slight exertion or from fright.

"15. The effect of hæmorrhage was tested by opening the femoral artery and allowing a considerable amount of blood to escape. Immediate lowering of the blood pressure results, which, though dangerous in itself, does not affect the action of chloroform, except that in such conditions less chloroform would be required to lead to anæsthesia, and the lowering of the pressure would prevent too rapid intake of the anæsthetic.

"16. An animal in the vertical position is not more prone to shock during various operations, and inversion of the body—head downwards—failed to restore an animal in the last stage of chloroform poisoning.

"17. Certain differences in the manner of behavior of different animals to chloroform are stated, but as far as its anæsthetic action goes, it is the same for all.

"18. Experiments with ether showed that efficient anæsthetisation is not possible, unless some form of inhaler is used which thoroughly excludes air. If an ordinary cap, containing a sponge saturated and applied to the face very closely, the animal holding its breath and struggling, we get immediate fall of blood pressure and slowing of the heart. If the ether is continued a condition of semi-anæsthesia results, the pressure rising and falling to a slight degree. When air is rigidly excluded, pressure falls gradually as with chloroform, and with the same phenomena, anæsthesia, cessation of respiration, then of the heart, then death. It is impossible to say how far this is due to ether, and how far to asphyxia. Exactly similar effects can be brought about by making the animal inhale carbonic acid gas alone. So, if surgeons are content with semi-anæsthesia, it can be produced with perfect safety, though discomfort, by holding ether rather closely over the mouth. If perfect anæsthesia is required, it must be obtained by rigid exclusion of air, and then the same dangers exist as in chloroform inhalations. The blood pressure may fall very rapidly and death ensue. Injection of ether into the jugular vein produces a fall of blood pressure and anæsthesia just as chloroform, but leads to formation of large clots in the heart, which the latter does not.

"19. The A. C. E. mixture given gently, with plenty of air and usual chloroform conditions, produces the typical chloroform tracing. Given freely to a struggling animal, it can produce a very rapid and dangerous fall of blood pressure.

"20. As to the accidental death which occurred during chloroform anæsthetisation they were due to neglect in watching the respiration, or reckless administration of chloroform to prevent struggling, just as they probably occur in the human subject, and they explain those cases of supposed "sudden death" for which there is not the slightest evidence to warrant the assumption that a single one of them was due to paralysis or sudden stoppage of the heart as Snow assumes.

"The behavior of lower animals to chloroform is just the same as the human being, and the statement so frequently made that dogs are more resistent to chloroform than human beings is entirely incorrect.

"Such are in the main the conclusions come to by this Commission. They have been in this report but little abridged here and there. It is seen what important results have attended these experiments, an importance which cannot be over-estimated."

And now for the practical conclusions which are given in the Commission's words.

PRACTICAL CONCLUSIONS.

"The following are the practical conclusions which the Commission think may fairly be deduced from the experiments recorded in this report:

"1. The recumbent position on the back and absolute freedom of respiration are essential.

"2. If, during an operation, the recumbent position on the back cannot, from any cause, be maintained during chloroform administration, the utmost attention to the respiration is necessary to prevent asphyxia or an overdose. If there is any doubt whatever about the state of respiration, the patient should be at once restored to the recumbent position on the back.

"3. To ensure absolute freedom of respiration, tight clothing of every kind, either on the neck, chest, or abdomen, is to be strictly avoided; and no assistants or bystanders should be allowed to exert pressure on any part of the patient's thorax or abdomen, even though the patient be struggling violently.. If struggling does occur, it is always possible to hold the patient down by pressure on the shoulders, pelvis, or legs without doing anything which can, by any possibility, interfere with the free movements of respiration.

"4. An apparatus is not essential, and ought not to be used, as, being made to fit the face, it must tend to produce a certain amount of asphyxia. Moreover, it is apt to take up part of the attention which is required elsewhere. In short, no matter how it is made, it introduces an element of danger into the administration. A convenient form of inhaler is an open cone or cap with a little absorbent cotton inside at the apex.

"5. At the commencement of inhalation care should be taken, by not holding the cap too close over the mouth and nose, to avoid exciting, struggling, or holding the breath. If struggling or holding the breath do occur, great care is necessary to avoid an over-dose during the deep inspirations which follow. When quiet breathing is ensured as the patient begins to go over, there is no reason why the inhaler should not be applied close to the face; and all that is then necessary is to watch the cornea and to see that the respiration is not interfered with.

"6. In children, crying ensures free admission of chloroform into the lungs; but as struggling and holding the breath can hardly be avoided, and one or two whiffs of chloroform may be sufficient to produce complete insensibility, they should always be allowed to inhale a little fresh air during the first deep inspirations which follow. In any struggling persons, but especially in children, it is essential to remove the inhaler after the first or second deep inspiration, as enough chloroform may have been inhaled to produce deep anæsthesia, and this may only appear, or may deepen, after the chloroform is stopped (*vide supra*). Struggling is best avoided in adults by making them blow out hard after each inspiration during the inhalation.

"7. The patient is, as a rule, anæsthetized and ready for the operation to be commenced when unconscious winking is no longer produced by touching the surface of the eye with the tip of the finger. The anæsthetic should never, under any circumstances, be pushed till the respiration stops; but when once the cornea is insensitive, the patient should be kept gently under by occasional inhalations, and not be allowed to come out and renew the stage of struggling and resistance.

"8. As a rule, no operation should be commenced until the patient is fully under the influence of the anæsthetic, so as to avoid all chance of death from surgical shock or fright.

"9. The administrator should be guided as to the effect entirely by the respiration. His only object, while producing anæsthesia, is to see that the respiration is not interfered with.

"10. If possible, the patient's chest and abdomen should be exposed during chloroform inhalation, so that the respiratory movements can be seen by the administrator. If anything interferes with the respiration in any way, however slightly, even if this occurs at the very commencement of the administration, if breath is held, or if there is stertor, the inhalation should be stopped until the breathing is natural again. This may sometimes create delay and inconvenience with inexperienced administrators, but experience will make any administrator so familiar with the respiratory functions under chloroform that he will in a short time know almost by intuition whether anything is going wrong, and be able to put it right without delay before any danger arises.

"11. If the breathing becomes embarrassed, the lower jaw should be pulled, or pushed from behind the angles, forward, so that the lower teeth protrude in front of the upper. This raises the epiglottis and frees the larynx. At the same time it is well to assist the respiration artificially until the embarrassment passes off.

"12. If by any accident the respiration stops, artificial respiration should be commenced at once, while an assistant lowers the head and draws forward the tongue with catch-forceps, by Howard's method, assisted by compression and relaxation of the thoracic walls. Artificial respiration should be continued until there is no doubt whatever that natural respiration is completely re-established.

"13. A small dose of morphia may be injected subcutaneously before chloroform inhalation, as it helps to keep the patient in a state of anæsthesia in prolonged operations. There is nothing to show that atropine does any good in connection with the administration of chloroform, and it may do a very great deal of harm.

"14. Alcohol may be given with advantage before operations under chloroform, provided it does not cause excitement, and merely has the effect of giving a patient confidence and steadying the circulation.

"The commission has no doubt whatever that, if the above rules be followed, chloroform may be given in any case requiring an operation with perfect ease and absolute safety, so as to do good without the risk of evil."

EDWARD LAWRIE (President),
T. LAUDER BRUNTON, } Members.
G. BOMFORD, } Members.
RUSTOMJI D. HAKIM, } Members.
EDWARD LAWRIE, Surgeon-Major.

HYDERABAD, December 18, 1889.

THE URINE IN PERNICIOUS ANÆMIA.—In a series of able papers upon this topic (*London Practitioner*) Dr. William Hunter comes to the following conclusions:

1. The presence of pathological urobilin in great quantity—a coloring matter derived, in all probability, partly from the bilepigments in the intestinal tract, partly from other products of hemoglobin destruction, found so abundantly in the liver, spleen, and kidneys in this particular case.

2. The presence of blood-pigment, recognizable on microscopic examination, of whose source there could be no doubt, as it appeared in the urine in the form of granules similar in appearance and character to those afterward found in the cells of certain of the renal tubulus.

3. An increased excretion of iron.

All these changes point to the existence of one condition of the blood, namely, an excessive destruction; and they all agree in one respect, namely, that they varied in degree from time to time, the aggravations of weakness from which the patient periodically suffered being marked by higher color of urine, excretion of blood-pigment, and increased excretion of iron.

In addition to this, their pathological significance these changes are, I am inclined to think, of no little importance from a diagnostic point of view. The high color of the urine observed, unaccompanied as it was by any diminution in quantity or any rise in specific gravity, and the presence of granules of blood-pigment in the urine, pointed so unmistakably to the nature of the pathological process at work in the blood that they established conclusively the diagnosis of the case as one of pernicious anæmia.

One must, however, in this connection guard one's self against a misconception that may not improbably arise. The urine in pernicious anæmia need not always show these well-marked and, when present, characteristic changes. It may be said, however, with some degree of assurance, that they will be found more or less marked in all cases at some period or other of their history.

In all cases, as in the foregoing one, there will be times corresponding to the periods when the patient is gaining ground, when the color of the urine will be that of health, and nothing abnormal will be microscopically recognizable.

The aggravations of weakness will always, however, be evidenced by a higher color of the urine; it may be also by the appearance of blood-pigment granules in the urine, both changes marking the nature of the process within the blood which is the occasion of these attacks, namely, excessive hemolysis.

In the recognition of this fact as to the nature of this form of anæmia, and of the farther fact that, as I have endeavored to show elsewhere, this destruction is initiated in the portal system, and depends upon changes occurring within the gastro-intestinal tract, is to be found the great indication for that treatment of the disease which will most probably be of value. Having established, as I think these various observations conclusively do, what is the nature of the morbid process within the blood, our next endeavor must be to recognize and combat the changes within the gastro-intestinal tract on which they depend. This subject I hope to deal with in a future paper based on further investigations either already made or still in progress.

THE EAR IN CRIMINALS (By H. Havelock Ellis, L. S. A.)—Even non-scientific observers have noted the frequency among criminals of projecting or of long and voluminous ears. In the answers to my Questions issued to medical officers of prisons I found that the prominent ears of criminals were more generally recognized than any other abnormality. Thus, Dr. V. Clarke says: "The largely developed external ear is a common feature;" others speak of "ears often large and outstanding" etc. Lombroso finds the ear "ad ansa," as he calls it,—the handle-shaped ear—in 28 per cent. of his criminals; Knecht in 22 per cent., Marro not more frequently than among ordinary people. Ottolenghi, who has recently examined the ears of nearly 600 criminals and of 200 normal persons, finds that while among the latter it is found in 20 per cent., among the former it is found in 39 per cent., the percentage varying from 35 among thieves to 42 among those convicted of assault and wounding. This observation is, indeed, by no means of recent date. In reading lately that curious treatise of mediæval physiology, Michael Scott's "De Secretis Naturæ," I found that a very bad character is given to those persons whose ears are uncommonly long, or ample transversely; they are bold, vain, foolish, incapable of work. To come down to comparatively recent times, Grohmann, in 1820, noted the prominent ear as a marked characteristic of the criminal. Morel studied the abnormalities of the ear, especially in relation to heredity; and in England, Laycock fully appreciated their value as indications of degeneration.* Dr. Langdon Down, working on the sames lines as Laycock, points out in "Mental Diseases of Childhood" the frequency of congenital ear deformities in idiots and the feeble-minded, associated often with webbed toes and fingers; also an implantation of the ears farther back than normally, giving an exaggerated facial development. In France, Italy, and Germany there has within the last two or three years sprung up a considerable literature on the subject, of which Frigerio's little book, "L'Oreille Externe, Etude d'Anthropologie Criminelle," (Paris, 1888), is perhaps the most valuable. Dr. Frigerio, who has devoted special attention to this feature both among criminals and the insane, finds certain peculiarities very common, and also notes various anomalies of movement in the pinna and its partial hyperæmia, especially in neurotic subjects. From the examination of several hundred subjects, he concludes that the auriculo-temporal angle (measured by a special otometer from the edge of pinna to the mastoid) undergoes a gradual progression from below 90° in the normal person, above 90° among criminals and the insane, up to above 100° among apes. He found the large angle very marked in homicides, less so in thieves. The longest ear Frigerio has ever seen in man or woman was in a woman convicted of complicity in the murder of her husband; the left ear was 78 mm., the right 81 mm. (the normal being 50-60 mm.) in length. Her father, her two sisters, and three cousins all possessed excessively large ears, and were all convicts. The degenerative variations to which he attributes most importance are the Darwinian tubercle—*i. e.*, a pointed projection in the outer margin of the ear—frequent among the insane and criminals, the doubling of the posterior branch of the fork of the antihelix, and a conical tragus (very frequent in childhood and among apes) often found among the insane and criminals. Féré and Séglas,* who examined over 1,200 subjects—healthy, insane, idiotic, and epileptic—found anomalies frequent among epileptics, and especially so among idiots, but not notably more frequent among the insane than among the sane. They especially noted the number of abnormalities frequently found in the same subject; and also a connexion between defects in the ear and sexual abnormalities.

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* Lectures on Physiognomical Diagnosis of Disease: Medical Times, 1862.

The most common (so-called) atavistic abnormalities of the ear—*i. e.*, those most frequently and prominently seen among the anthropoid and other apes—are the Darwinian tubercle,† absence of one of the branches of the fork, absence of helix, effacement of antihelix, exaggerated development of root of helix, absence of lobule. Adherent lobule may frequently be observed in well developed individuals; it is not found among apes, and appears to have no special significance.

The projecting ear has usually been considered as an atavistic character, and with considerable reason, as it is found in many apes, in some of the lower races, and it corresponds to the usual disposition of the ear in the fœtus. Marro prefers to regard it as a morbid character because it is frequently united with true degenerative abnormalities, and because it is always found in the lowest human races; Hartmann, for instance, having found it frequently among the European peasants, and in Africa more frequently among Turks, Greeks, and Maltese than among the indigenous Fellahs, Berbers, and negroes of the Soudan. Among so low a race as the Australians the ear is often, I have noticed, very well shaped. At the same time the projecting ear frequently accompanies deaf mutism, Dr. Albertotti having found it in sixteen out of thirty-three deafmutes.

The ear, it is well known, is very sensitive to vaso-motor changes, slight changes serving to affect the circulation visibly; so that in pale, nervous people a trifling emotion will cause the ears to blush. Galton tells us of a schoolmistress who judges of the fatigue of her pupils by the condition of their ears. If the ears are white, flabby, and pendant, she concludes that the children are very fatigued; if they are relaxed but red, that they are suffering, not from overwork, but from a struggle with their nervous systems, rarely under control at the age of fourteen or fifteen. If this kind of sensitiveness is not common among criminals, a few of neurotic temperament, as well as some lunatics, possess the power, rare among normal persons, of moving the ear. Frigerio notes movements of the superior and posterior muscles, especially when touched; in apes the transverse muscle also acts. Frigerio connects this power of movement with perpetual fear, always on the look out; many of the criminals with this peculiarity were recidivists, and three of the lunatics had delusions of persecution.

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* Contributions a l'Etude de quelques Variétes Morphologiques de l'Oreille Humaine. Revue d'Anthropologie, April 15th, 1886.

† Schwalbe, who distinguishes five principal forms of the Darwinian tubercle, regards it as normal, and believes that with a little practice it might be discovered in nearly all ears. This may well be, but in its distinctly marked form it can scarcely be called normal.

The interest of these investigations, now so actively carried on, into the malformations of the pinna among criminals is obvious. A few ingenious persons have sought to explain some of them by the inflnence of the headgear, pulling of the ears, etc.; but on the whole it is generally recognized that they are congenital. The study of them, therefore, is of distinct value in enabling us to fix the natural relationships of the criminal man. There is still need for careful series of observations on criminals, the insane, epileptics, and idiots, and every such series should be controlled by a similar series of observations on ordinary subjects.—*Lancet.*

MEDICAL NEWS AND NOTES.

MARS, of Krakau, describes a new method, by which he has succeeded in three cases in extracting the presenting breech, when he had failed by the ordinary manual methods. In his first case the breech presented, S. L. A., os fully dilated, breech arrested at superior strait, beginning acute œdema of the lungs in the mother. Failing to extract by means of the fingers hooked into the groins and by other manual methods, he adopted the following procedure: Supporting the fundus with the left hand, he introduced his right hand flatwise within the uterus between the uterine wall and the child's sacrum, until the hand was high enough to enable him to grasp the fœtus with the thumb and little finger just above the illiac crests, while the other fingers were extended along the fœtal spine. He then drew upon the fœtal trunk during the pains, which pressed his hand firmly against the child's body, until the breech was brought to the pelvic floor, when the fœtus was easily extracted.—*Boston Medical and Surgical Journal.*

M. CLEMENS (*Journal de Medicine de Bordeaux*) reports good results in the treatment of ingrowing toe-nails, by the employment of tin-foil, such as is used for enveloping chocolate and other food products. A single or double sheet of the tin-foil is introduced between the nail and the ulcerated tissues beneath, by the aid of an instrument with a thin blade. The tin-foil is kept in place by wax, which is moulded over the parts. M. Clemens attributes the beneficial effects to the chemical, rather than the mechanical action of the tin-foil.

RICORD is said to have left memoirs of his life and professional career under the suggestive name of the " Nineteenth Century Seen with the Speculum."

THE world's greatest composer—Chloroform.

THE Supreme Court of New Hampshire has decided that the law of that State, requiring a license for the practice of medicine, surgery and dentistry is unconstitutional.

DANGEROUS FUN.—Professor Cook, the chemistry professor of Harvard College, has a reputation for facetiousness, and his lectures are highly popular, though the attraction appears to partake somewhat of the fearsomeness with which little children pay their first visit to Madame Tussaud's Chamber of Horrors. One of his lectures, says the *Toronto Mail*, is devoted to dangerous explosives, and a stir always goes over the room when he picks up a bottle labeled nitro-glycerine. When he takes the bottle and holds it up, the yellow liquid stirring with the shaking of his hand, he always says something like this: " Now, gentlemen, it is commonly believed that if I were to drop this little bottle, we should all be blown to the skies " (his hand trembles a little more, and timid freshmen look longingly at the door); " but if this compound is pure—perfectly pure, mind you—I can light a match with perfect safety and thrust it down the neck of the bottle." Here he feels for a match. " But," he instantly adds, " I am free to confess that I have not enough confidence in its purity to try the experiment." (Many sighs of relief.)

CARDIAC DISPLACEMENT.—"Were you wounded in the Crimea, Pat?"

" No, yer honor; the bullet hit me in the chist and kem out at me back."

" Why, Pat, that would have gone right through your heart."

" Och, faix, me heart was in me mouth."—*Pract. and News.*

REMOVAL OF ENTIRE SHAFT OF THE FEMUR.—J. J. Jones (*International Journal of Surgery*) reports the entire removal of the necrosed shaft of the femur of a child of two years, with good recovery and the growth of a new shaft within the periosteum of the old.

WHAT MAKES A SUCCESSFUL PHYSICIAN.—Sir Andrew Clark is quoted as believing that the essential elements of success are:

" First, I believe that every man's success is within himself, and must come out of himself. No true abiding, and just success can come to any man in any other way. Secondly, a man must be seriously in earnest. He must act with singleness of heart and purpose; he must do with all his might and with all his concentration of thought, the one thing at the one time, which he is called upon to do. And, if some of my young friends should say, here, 'I cannot do that—I cannot love work,' then I answer that there is a certain remedy, and it is work. Work in spite of yourself, and make the habit of work, and when the habit of work is formed, it will be transfigured into the love of work; and at last you will not only abhor idleness, but you will have no happiness out of the work, which then you are constrained from love to do. Thirdly, the man must be charitable, not censorious—self-effacing, and not self-seeking; and he must try at once to think and do the best for his rivals and antagonists that can be done. Fourthly, the man must believe that labor is life; that successful labor is life and gladness, and that successful labor, with high aims and just objects, will bring to him, the fullest, truest and happiest life that can be lived upon the earth."

BILLROTH, of Vienna, recently inveighs against the use of carbolic acid. He refers to four cases which he has lately seen, in which fingers which had suffered from the most insignificant injuries became gangrenous through the use of carbolic acid. Carbolic acid is now much less used in surgery, than formerly. He refers to the fact, that the best antidote in carbolic acid poisoning is soap, which should be taken immediately and repeatedly, until the symptoms of poisoning have disappeared. This is a fact which should not be overlooked. It is probable that the local irritation caused by the carbolic acid in the stomach will be relieved by the soap having a neutralizing effect upon the carbolic acid itself, and possibly the soap may have a *soporific* effect upon the nervous system of the patient.

NEUROPATHOLOGY: A DOG WITH HALF A BRAIN.—A most interesting physiological experiment was one recently performed by Dr. Goltz, of Strasburg It consisted of relieving a dog of the entire left hemisphere of his brain, taken out piecemeal during the course of a month. The dog seemed but slightly inconvenienced by his loss: his voluntary movements were not impaired. The right paw was evidently weaker than the left, but when his food was covered with earth and straw and his left paw held, he would uncover the food with the right one. Some rotatory troubles were also observable.—*Bulletin Medicale*, September 15, 1889.

NEW FUNCTION OF THE MEDULLA.—Professor Richart, of Paris, has demonstrated by a series of experiments, that the exhalation of watery vapor is a special function of the nervous system, particularly the medulla. With thin-skinned animals the water passes off through the skin, and a lowering of the temperature is effected by the exhalation; but in thick-skinned animals, as the dog, the cooling process is performed by the lungs.

THE LATE SIR WILLIAM GULL.—After the reading of the minutes at the last meeting of the Neurological Society of London, the President, Dr. Buzzard, made the following remarks:—

"Since our last meeting death has deprived the Neurological Society of one of its most distinguished members. Even if this were a fitting occasion, we are too near the event to be able to attempt an estimate of the place which Sir William Gull is likely to take, in times to come, in the roll of the medical profession. But we know, from our own observation, that he was an ardent student of science, of singular shrewdness in diagnosis, gifted with a big mind which found interest in all that concerns humanity, and possessed of a power of personal influence and fascination which was felt by all, patients and fellow-workers, with whom he was brought in contact. There were none, I venture to say, of those who enjoyed his intimate acquaintance who failed to see in Sir William Gull one who was, so to speak, " head and shoulders above the crowd." Of wide knowledge and experience, he shrank instinctively from all forms of unhealthy specialism, but did not hesitate, when invited, to become an original member of this Society, of which he recognized the broad aims and worthy object. His contributions to neurology in more recent years are well known and recognized to be of permanent value. The cases of Paraplegia which he published in the Guy's Hospital Reports more than thirty years ago are such models of accurate observation and judicious induction that it is to be regretted that the form and mode of their publication have caused them to be less extensively know and studied than they deserve to be. Humanity and science have sustained a severe loss in the death of this accomplished physician.—*Lancet.*

EDITORIALS.

OF the questions that present themselves for a proper solution, none is of more importance or interest to the surgeon or patient than that of anæsthesia. Grant that it is old, trite, or anything else, the fact remains that it is unsolved and must be. However, for general purposes the question has long since been narrowed down to the use of two anæsthetics—chloroform and ether; and in New York, at least, one is almost apt to lose sight of the former for any surgical use. So strong is the prejudice in favor of ether, that a surgeon runs no small risk of an indictment by a grand jury if he is unfortunate enough to have a fatal result in a case to which chloroform has been administered for purposes of anæsthetization.

Outside of large communities chloroform has been and continues to be largely used and that its use is sometimes attended by fatal results, perhaps, if you choose, more frequently than is ether, we may admit without in the least shaking our faith in the anæsthetic as being a comparatively safe one. It is outside of the limits of our present intention to take up the advantages in a number of respects that chloroform offers; but we wish to call attention to the fact that it is the *improper administration*, and not the anæsthetic, that is responsible for a number of the reported fatal cases.

In support of this, let us consider for a few moments the report of the Hyderabad Commission, given in another part of the JOURNAL, of which T. Lauder Brunton was one of the five members. This Commission made experiments on over six hundred animals, monkeys, dogs, cats, horses, goats and rabbits, "in order to show the effect upon the blood pressure, heart, and respiration of inhalation of chloroform, ether and the A. C. E. mixture (alcohol, chloroform, and ether), administered in various ways and under varying conditions."

Already a number of silly questions have been raised of which the one that to our mind is "facile princeps" is, that in cases in which death has resulted, during chloroform anæsthesia, the administrator of the anæsthetic was guilty of murder. This is, on the face of it preposterous. But in its wake, follows a more serious question: Can administrators hereafter be held guilty of manslaughter in such cases? This may be relegated to the same domain as the question: Will the heathen be damned if they do not hear the gospel? However, the report of the Commission not only increases the responsibility of the administrator, but also that of the teacher; and it is to the latter that we must look for a dissemination of the knowledge.

We have spoken on this subject, not to urge the universal use of chloroform, but to insist on the usefulness of this anæsthetic and its comparative lack of danger, when properly given. Too often—in the very teeth of the common belief, wrong though it may be—have we seen ether given to patients with extensively diseased kidneys. In some of these cases, the common belief in regard to the contraindication for the use of chloroform in valvular disease of the heart might have been offered as an extenuation but in others little or no valvular disease existed and yet ether was used.

In a paper recently read before the Surgical Society, Dr. Weir, of this city, questions the injury to the kidneys, whether or not previously diseased, supposed to follow and be dependent on ether administration. It will, perhaps, be quite as difficult, to eradicate this belief from the minds of American surgeons as the belief that in some cases, especially of fatty heart, chloroform anæsthesia causes, by arrest of the heart, death as sudden as it is often unexpected.

At least, according to the present state of our knowledge, and the teaching of the day, it would seem that there are distinct indications, not only for the use of, but also for the non-use of one or the other anæsthetic. On this question, Dr. Francis Hewitt has recently published an article in the *British Medical Journal*, the substance of which is given in an editorial, in the *N. Y. Medical Journal* for March, 8, and is as follows:

"The points to be considered in choosing the anæsthetic agent best suited to the requirements of a given case he states to be as follows: The length of time during which the anæsthesia is to be maintained; the nature of the operation to be performed; certain procedures involved in the operation which may affect the administration of a particular agent or the agent itself; and the presence of some morbid or other condition in the patient which may contraindicate the use of certain anæsthetics. He formulates the indications for and the contraindications to the use of the following anæsthetics: nitrous-oxide gas, ether, chloroform, and the "A. C. E." mixture, giving the preference to ether for general use, but sharply defining the limitations of their use. Nitrous-oxide gas is used for very brief operations, except in the cases of very young or very old subjects or when disease or great impairment of the organs of respiration is present, and also as a preliminary to etherization. Ether should not be employed in cases such as the foregoing, or in those in which renal disease exists: in those involving the abdominal section; in operations about the upper air-passages in which the actual cautery is employed, or when the site of operation is such that the continuous administration of ether is rendered impossible, and the time required is greater than the ether coma would last without further administration, or when a preliminary tracheotomy has been performed. Chloroform, preferably diluted with alcohol, or the "A. C. E." mixture is to be used in cases in which ether is contraindicated, but not when cardiac disease is present or in cases of shock or collapse. Pure chloroform is evidently regarded by Dr. Hewitt with wholesome respect, as he limits its use to the utmost extent. It is to be given during labor as an anodyne, but it is to be replaced by ether when complete anæsthesia is required for the use of the forceps or for other obstetric operations. Its use, or that of the A. C. E. mixture, is preferred in cases of abdominal section, by reason of its slighter tendency to cause retching after the operation, thereby making the danger of secondary hæmorrhage from the adhesion, etc., less than in cases in which ether is used."

The report of the commission deals with the A. C. E. mixture and it is not necessary to say more, in regard to nitrous oxide.

There is very little left to say, except that we have a right to insist that every medical graduate be thoroughly and properly taught the administration of chloroform, and be taught to appreciate the fact that in its proper administration it is as safe as any anæsthetic—that it is the respiration primarily that must be watched, and that provision must always be made for abundant dilution with air.

ELECTRICITY IN GYNÆCOLOGY.—The history of every innovation of any value in the practice of the healing art has been about as follows: Either by steady and persistent efforts of its advocates, against great opposition, it has been able to take the place which it deserves, or it has suddenly sprung into great popularity, has become the engrossing topic for the time being, been worked to death, then laid aside and almost forgotten, until some one, able to see its good points, has aroused it from its lethargy, culled out and cast aside those parts of it which were productive of harm, and then has placed it in that position which a rational therapeutic measure ought to occupy. Electricity, in the practice of gynæcology, has been used for some years past in an empirical and unscientific manner with the results usually obtained when any measure is thus employed, viz : a few successes, for which no one could rationally account, and many dismal failures. During the last six or eight years, however, it has been shorn of its empiricism and has been presented to the medical profession of the world as a rational therapeutic agent, through the labors of Apostoli, and a small band of followers. The persistent and steady manner in which these men have labored, in the face of opposition and disbelief on the part of many of the best gynæcologists of the world, must certainly excite admiration even in the breasts of its opponents. To-day it has obtained a footing which leads us to believe that it has come to stay, and will take its place along with other well-recognized measures which have been devised for the relief and cure of diseases of the organs contained in the female pelvis. There are three sets of men whose opinions regarding this agent should be noted. (1) Those who claim most brilliant results for it, and think it will, in a great majority of cases, supersede the operations of ovariotomy and hysterectomy; (2) Those who deny that it possesses any virtue whatever, and (3) Those who occupy a middle ground and say " we have found it productive of good and are willing to try it further." That it is an agent of merit can hardly be denied. Let us disregard, if you please, the writings and arguments of those who have done most work with it and who might be called enthusiasts (although this is manifestly unfair) and there will still come to us the voices of such men as Playfair and Thomas Keith, the former saying, " I am certainly prepared to say that I should deem the man who performs hysterectomy or oöphorectomy for a hæmorrhagic fibroid, before the hæmostatic effect of electricity has been fairly tried, to be fairly chargeable with gross malpractice and great injustice to his patient." The latter, the very man who has to his credit better results in the operation of hysterectomy than any other gynæcologist, says : " What I now plead for is, that for a time all bloody operations for the treatment of uterine fibroids should cease, and that Dr. Apostoli's treatment, as practised by him, should have a fair trial. * * * Hysterectomy, remember, which is performed every day for a complaint that rarely of itself shortens life, kills every fourth or fifth woman who is subjected to it. * * * I would give something to have back again those sixty-four women that I did hysterectomy for, that I might have a trial of Dr. Apostoli's method upon them." Surely such utterances as these ought to make a man stop and think before he removes a woman's ovaries and uterus for such a cause, thus subjecting her to all the immediate risks of a dangerous operation and the many annoying and persistent sequelæ which frequently follow such operations. Opponents of the use of electricity in gynæcology say such powerful currents as are sometimes used are dangerous. So are many comparatively easy and simple methods of treatment in the hands of those who are unskillful and do not know what they are doing, but reliable statistics will show that in skillful hands the danger is reduced to a minimum and the mortality is practically *nil*. This latter fact, however, should not induce any one to rush blindly into its use and to attempt to administer it unless he is thoroughly conversant with its technique, is a fairly good diagnostician and is supplied with all the appliances. We can not agree with the gentleman who not long since said he considered the milliampèrmeter a sort of a plaything. Is the measurer of the dose a plaything? Would he give a drug without first weighing it? Electricity as a therapeutic agent now stands where it can not be laughed at, sneered at, or dislodged except by other procedures which furnish better results, and if such results as are claimed can be obtained by its use, it is the duty of every fair-minded gynæcologist to aid in its further development and help place it where it belongs. If it will do away with some bloody operations which cure some women, send others to their graves, and leave others in as bad or worse state than before the operation, it will be welcomed as a boon by suffering women and will be a source of pride and gratification to those who use it.

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GAILLARD'S MEDICAL JOURNAL.

VOL. L. NEW YORK, MAY, 1890. No. 5.

ORIGINAL ARTICLES.

ARTICLE I.

SEBORRHŒA.*

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It may seem somewhat presumptuous in me to talk to you, who have had so much experience in dermatology in old Charity, upon so common and ordinary a disease as the one that forms the subject of this paper. But I call to mind the thread-worn story of the recent medical graduate who was floored by his first case; one of colic in a baby. He said that he was well up on phthisis and pneumonia, but that the professor of practice had never said anything about colic. So it may be that you are competent to recognize and treat syphilis, psoriasis, and even mycosis fungoïdes, and yet are not posted upon seborrhœa.

Until 1887, we thought we knew all about seborrhœa. But there is a man in Germany, Unna by name, who is not content to follow the teachings of the fathers, and is, at the same time, gifted with unbounded powers of work. He, in 1887, told us that we were all wrong, and that what we had always regarded as seborrhœa is not so at all, but is something, on the contrary, quite the reverse, namely, a form of eczema. Let us first consider the subject of seborrhœa as we have always understood it. Afterwards we can take into consideration Unna's view of the case.

Seborrhœa is, then, a functional disease of the sebaceous glands, which assumes two forms depending upon the quality of the products of the glands. Normally these glands secrete only sufficient oil to keep the skin soft and supple. This normal oil is not visible to the naked eye. Under certain imperfectly understood conditions, the glands secrete a too fluid and abundant oil that is readily seen as an oleaginous coating of the skin. This form of seborrhœa is called seborrhœa oleosa. Under certain other equally imperfectly understood conditions, the secretion of these glands is not only too abundant but also too consistent. Then the sebacious matter cakes upon the skin in the form of more or less thick plates or masses, and we have the condition known as seborrhœa sicca.

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* Read before The Society of the Alumni of Charity Hospital, March 11, 1890.

The most common locations of seborrhœa are, naturally, those regions where the sebaceous glands are the largest or most numerous, namely: the scalp, the chest, the inter-scapular region, and the face.

Seborrhœa oleosa, while it may occupy any or all these regions, is in reality subjected to us for treatment only when it occurs upon the face. Here it is seen most often on the nose, where it forms a greasy coating. At times this is so slight as to be felt rather than seen, imparting, as it does, a slippery sensation to the finger. At other times it is so abundant that it can be seen at a distance as drops or beads of oil, and when it is removed with a cloth or blotting paper it leaves an oily stain upon it. When it is wiped off it at once reforms. As the greasy skin catches the dust the face is apt to look dirty. It may well be imagined that this, as well as the greasy appearance, is a source of much annoyance to the patient. At times the skin of the nose may be hyperæmic. The forehead is, likewise, a not uncommon site for this form of seborrhœa. It may occur on the scalp, but attracts notice only when the patient is bald. Upon the nose it may occur as the only disease of the skin. Upon the forehead it is a not unusual accompaniment of acne. Acne and comedones may complicate the disease in any location.

Seborrhœa sicca occurs with much greater frequency than does the oily form of the disease. We are called upon to remove it from all the regions already mentioned as the locations for the manifestations of seborrhœa. It most usually appears in the form of yellowish or grayish fatty plates or masses, which when taken and rubbed between the fingers impart a greasy feel. Upon the scalp it constitutes one form of dandruff. Here it may be general, involving the whole scalp, or it may locate itself in certain places in a more pronounced way than in others. The hair is dry, and after a time, the seborrhœa continuing, it begins to fall, and at last baldness is established.

In this form of seborrhœa sicca, it is the hairy regions that are especially affected, and we find it in the eyebrows, bearded portions of the face, and the hairy portions of the chest. The axillæ and pubes are rarely affected. In all these places it presents similar appearances, yellowish or grayish fatty plates. Upon the chest it is not uncommon to see the fatty matter in little heaps, piled up as it were about the mouths of the hair follicles. Close observation will show that the follicle mouths are wider open than they should be. As in the oily form the skin feels greasy, and acne and comedones are present. The interscapular region is frequently affected, and both here and on the chest the disease often takes the form of round or irregularly shaped patches which look as if they were covered with a brownish yellow varnish.

Aside from the appearance of the fatty crusts and a slight amount of itching when the patient is warm, this form gives rise to no symptoms. When the crusts are removed the underlying skin is of normal appearance. If may be slightly paler than it should be, but it is never moist. What the patient complains most about is that the scales from the crusts becoming loosened fall upon the clothing and make it look as if powdered. If the patient happens to be bald he does not find the yellowish fatty crusts upon his bald head at all ornamental. But the most serious aspect of the case is that if the disease is not cured it is very sure to cause the hair to fall, especially if the patient is at all predisposed to baldness.

There is a second variety of seborrhœa sicca, in which a varying amount of dermatitis is added to the seborrhœa. Then there will be a rim of redness about the fatty crust, and when the crust is removed from the skin, the underlying part will be seen to be red. In this variety there will be far more decided itching and burning than in the preceding variety. It is to be noted that although the skin is red, it is always dry and never infiltrated, in these respects differing from eczema. Upon the chest and back the eruption will assume the form of circular patches covered by a yellowish or brownish crust, the peripheries being of a more or less bright red. Or the surface of the patch will be smooth and appear as if it had been varnished over with a brownish yellow varnish. Sometimes two or more patches will run together, and then we will find an irregularly shaped patch with a scalloped border. These patches will assume large dimensions in some cases. There may be one or several patches upon the chest or back. Instead of these circular patches, ring shaped patches may form. These tend to spread at the circumference, and to clear in the centre. When two rings meet at their peripheries the points of contact give way, and we have irregularly shaped figures with a scalloped outline. At times the rings themselves are not complete, and we meet with a number of broken rings and gyrate lines scattered over the chest or back. Owing to the constant rubbing by the clothing to which the chest and back are exposed in all people, and to the influence of soap and water in those who indulge in the daily bath, the crusts are frequently missing from the circles and rings. Then the eruption consists of red rings and circular patches, which on close inspection are seen to be made up of a number of red points. These points are the open mouths of the sebaceous glands surrounded by a zone of inflammatory redness. This variety of seborrhœa sicca is met with also on the scalp. Indeed it is never present on the trunk without at the same time being upon the head. I have described it first upon the trunk because it is most brilliantly marked in that region. Upon the scalp it is seen best in those who are bald. We find at times the same rings and circles that we have learned to recognize upon the chest, but it is rather more common for the disease to assume the form of a more diffused patch involving a large part of the scalp, with a zone of redness about the edges. When the disease is present in this pronounced form upon the scalp it is very prone to pass over onto the adjacent parts of the forehead and thus to form as it were a corona seborrhoicum. This corona will take the form of a yellowish or brownish crust with a red bounding line. The disease may in like manner pass over onto the adjacent parts of the skin of the neck.

Upon the nose, this variety of seborrhœa forms a yellow plate with a red line about it. At times this plate may be extensive enough to cover the whole nose. More frequently the disease is limited to the furrow behind the alæ nasi, and then assumes the form of some fatty scales upon a good deal of underlying redness. The eyebrows and bearded portions of the face are also quite commonly affected, but rather as a diffused redness combined with a branny scaling, than as a solid plate surrounded by a red line.

Besides the regions already mentioned as the usual locations of seborrhœa, we also meet with the disease upon the ears (in the tragus and behind the ears), and in the anal fold. The scalp, is, however, by far the most frequent location of the disease, and here it may exist alone for years. Whenever it exists elsewhere, it is sure to be found at the same time upon the head. It is well to remember this as a diagnostic point. It is well also to remember that if the disease is upon the scalp in the form of rings or circular patches with a red seam about them, the chances are that it is also on the chest and back. By quietly saying to your patient, "It is also upon your chest," you will impress him with the idea that you know what you are doing, and thus will win his confidence.

In infants the disease is very common, taking the form of thick crusts upon the scalp, that are often of a dirty gray color. These give the careful mother a good deal of annoyance, she being in great dread lest someone should think that she is not careful to keep the precious baby clean. This form of the disease is usually the remains of the vernix caseosa.

Pityriasis capitis used to be considered a form of seborrhœa. It should be considered rather as a scaling off of the upper part of the corneous layer of the skin and placed among the other pityriasis.

When we come to speak of the pathology of the disease it is then that we enter upon the domain of controversy, for it is here that Unna has wrought havoc with our long settled theories. Up to two years ago, we sailed quietly along upon the theory that seborrhœa was a functional disease of the sebaceous glands. But Unna would have us believe that there is no such disease as seborrhœa. He teaches that the process is inflammatory from the start, and that the oil that fills the epithelial scales comes not from the sebaceous glands but from the sweat glands. What we have called seborrhœa sicca he would have us call, for the present at least, seborrhœal eczema. He describes it as having three stages: First, the lowest grade of inflammation in which we have a simple desquamation of the upper layers of the skin; the condition that is commonly called pityriasis capitis. Secondly, a higher degree of inflammation in which we have a greater amount of scaling of the upper layers of the skin, and a heaping up of them into more or less thick crusts; the condition we have described as the first variety of seborrhœa sicca. The third stage is one of more violent inflammation in which the itching is pronounced, and there is redness of the skin; this corresponds to our seborrhœa with dermatitis. This third form he describes as met with on any portion of the body, and thus would make it equivalent to those forms of eczema we have always called squamous and orbicular.

In support of his thesis he presents us with microscopical studies and certain arguments. I am quite incompetent to pass judgment upon the microscopical work of so distinguished a microscopist as Dr. Unna. His work has been reviewed by other competent pathologists and I believe that many of his observations have been substantiated by their findings. I do not know that any investigators outside of his own scholars have given their assent to his proposition that the sebaceous glands are not responsible for seborrhœa. It has long been known that, to a seborrhœa, a dermatitis may be added, and that this, under various influences, may become an eczema. But this is a very different thing to saying that seborrhœa does not exist and that all those cases that we have been accustomed to call seborrhœa are but a variety of eczema.

One of the arguments given by Unna, to prove his theory of the production of the oily secretion, that is found in the scales, by the coiled glands, is that there are far too few sebaceous glands to keep the integument supplied with a sufficient amount of fat. Another argument is, that the palms and soles are well oiled, though there are no sebaceous glands in those parts. To me, these arguments are not convincing. It is true that the sebaceous glands are largest and most numerous in the scalp, and in hairy parts, and this is fitting, as their office is to supply oil to the hair, as well as to the skin. But they are scattered over the whole integument, excepting the palms and soles. As a little oil goes a good way, it is not necessary for us to have anything like the number of them as of the sweat glands, whose office is far more important physiologically. As to the palms and soles being supplied with oil, that is no argument against the function of the fat glands, as it is a well known fact, that the sweat always contains a certain small amount of oily matters.

Against these arguments, and strongly in favor of the correctness of the old accepted views of seborrhœa, is the fact that the clinical picture that we recognize as seborrhœa very rarely, in my experience never, occurs upon the palms and soles, locations that are deficient in fat glands. Moreover, seborrhœa may be said never to occur, excepting in hairy regions, and regions that are supplied with sebaceous glands of large size.

What we call seborrhœa oleosa, Unna believes to be nothing more than a hyperidosis, to which he gives the name of hyperidosis oleosa. This view he must take of necessity, on account of his theory of the office of the sweat glands.

This is an age of micro-organisms, and all diseases are traced to a parasitic origin. Any man who calls himself a bacteriologist, and has not discovered, or claimed to have discovered a new bug, is ashamed of himself; hence, the market is well supplied. But so great is the demand, that there is little danger of a fall in prices; at least, for a season. And so it is affirmed that the disease under discussion, is contagious, and due to a micro-organism. Up to the present time, though a number of parasites have been found on the scalp there is no one that can hold its place as THE cause of the disease.

Brooke, of Manchester, would have us believe, that, to the unknown parasite of seborrhœa without dermatitis, another equally unknown parasite adds itself, to produce the dermatitis and the ring formation. This reminds us of the familiar lines, by Swift:

> So, naturalists observe a flea,
> Has smaller fleas that on him prey;
> And these have smaller fleas to bite 'em;
> And so proceed, *ad infinitum.*

There are many things that seem to indicate a contagious element in the etiology of the disease. Cases have been reported, in which a husband or wife has contracted dandruff after marriage, he or she having been, before, free of the same. Then, those experiments of Lassar and Bishop, experiments that have been quoted so often, as to have become classic, point in the same direction. You recollect that they took the scales from the head of a student, who was losing his hair, and, having made a pomade of them with vaseline, rubbed the same into the back of a Guinea pig, and lo! the unfortunate pig became bald. So strongly impressed with the idea that baldness is contagious through the agency of dandruff, have our German cousins become, that in one state a law has been passed compelling all barbers to cleanse antiseptically all their implements after use, upon any and all customers. Oh! happy state! Just think how delightful it would be, to have your hair cut there, and not to have a cold chill of disgust run down your back, when the barber brushes your hair out with the brush he has used on scores of hundreds of previous customers.

The usual etiological factors of seborrhœa, as given in the text-books, are debility, chlorosis, constipation, and a number of other things, indicating that the condition of the patient is below par. Of course, the ability of these to cause dandruff is questioned. But that they are quite capable of aggravating the disease, I have no doubt, and I speak from my own personal experience. The disease affects all classes and conditions of men, all ages, and both sexes.

The diagnosis of seborrhœa is usually easy. It is to be recognized by the presence of fatty grayish or yellowish plates or crusts, seated either upon a normal or slightly reddened skin. These crusts or plates, differ from those met with in eczema, in being more readily removed, and in imparting to the finger a greasy feel. Moreover, the crusts of eczema are of a more solid consistence, being formed by the drying of an almost mucilagenous discharge upon the skin. When eczema occurs upon the head, the exudation glues the hairs together. In seborrhœa, the hairs are not glued together, but are dry and powdery. In eczema, there is more or less itching at all times, while in seborrhœa, the itching comes on most generally when the head is hot, as from artificial lights, sweating and the like. In eczema, there is moisture, or a strong tendency thereto. In seborrhœa, moisture is never seen.

Psoriasis is another disease with which seborrhœa is apt to be confounded, as it too, occurs in the form of powdery scales and crusts upon the scalp. If a case presents itself with these conditions upon the head alone, you may be very sure that you have to do with a case of seborrhœa, as psoriasis never exists upon that region alone. It is said in the books, that seborrhœa occurs diffusely, while psoriasis occurs in the form of circumscribed patches. It is also said that the crusts of psoriasis are of a silvery hue, while those of seborrhœa are yellowish or grayish. Both these differential points are well taken as a rule. But, in not a few cases, seborrhœa will occur in circumscribed patches, and the crusts of psoriasis may be of a grayish hue.

When seborrhœa occurs upon the chest and back in the form of rings with scaly centers, we have before us a more difficult problem in diagnosis. Now we must decide whether we have to do with a seborrhœa, a ringworm, or pityriasis rosea. The resemblance to ringworm is often very striking, but ringworm does not, as a rule, occur in so diffuse a manner. If, at the same time, with the lesion on the chest we find other lesions on the back between the shoulder blades, we may be quite sure that the case is one of seborrhœa. Happily in any doubtful case we have a sure resort in the miscroscope. If the case be one of ringworm, we will surely find the tricophyton. Upon examining the scalp, if the disease be seborrhœa, we will surely find plain evidence of it there. There should be no difficulty in recognizing the presence of a ringworm on the scalp.

In the differential diagnosis from pityriasis rosea, we are deprived of the kindly aid of the microscope. Here, too, the occurrence of seborrhœa on the scalp will aid us in our decision. Moreover pityriasis is generally more diffused over the trunk than is seborrhœa, and occurs also on the arms and abdomen. By close inspection we may trace the development of the disease from its beginning as a small red spot through its successive growth into the typical oval or annular patch with its withered parchment or chamois leather like looking center. It is scaly, never crusted. In some cases however, the diagnosis will remain somewhat doubtful.

The treatment of seborrhœa is simple. It is somewhat in favor of the parasitic theory of the origin of the disease that the drugs that are most efficacious in its cure are active antiparasitics. In my hands by far the most satisfactory remedy has been sulphur. After the removal of the crusts by means of any oil, or grease, (this should be done the first thing whatever remedy is chosen), the sulphur is to be applied in the strength of a drachm to the ounce, either suspended in sweet oil, cotton-seed oil, or vaseline. It should be well rubbed into the scalp and the application repeated every night for one week. It is well to advise the patient to wrap his head up in a towel, or to wear a night cap. This for the benefit of the housekeeper, who will thank you for saving the pillow cases. After one week's use of the sulphur, the head is to be washed with soap and water, and the oil, or salve, immediately reapplied. During the second week it will be sufficient to make the application every other night. Thus the treatment is to be continued, the number of applications being reduced until they are made but once a week. By this time the disease will be cured. The patient is to be cautioned that relapses are likely to occur, and therefore it will be best for him to keep a supply of his oil, or salve, on hand so as to attack the trouble as soon as it shows itself.

The objections to sulphur are two; it has a slight odor, and it leaves a slight yellow powder on the scalp. The first objection is of not much importance and may be overcome by adding a scent to the oil. The second is lessened by cautioning the patient not to use the application too freely, and by having him wash the head.

If your patient is a woman in private practice you will find that the ointment recommended by my distinguished friend, Dr. Bronson, will be a very elegant as well as efficient substitute for the sulphur It is

℞
Hydrag. ammon. - - - ℈i-ii
" chlor. mitis - - - ℈ii-iv
Vaselin. - - - - - ℥i
M.

This is to be used in the same manner as the sulphur.

While one or the other of these will bring the case to a happy issue, it is well to have a variety of means at command. On this account I would say that you will find benefit by using salicylic acid in castor oil, three per cent. strength : resorcin in oil or vaseline in about five per cent. strength : or a solution of hydrate of chloral, a drachm to the ounce. While for a soap both for cleansing and stimulation nothing is better than the tincture of green soap. If the scalp is peculiarily irritable then it is best to use a milder soap, such as Pear's glycerine soap.

We owe to Lassar a plan of treatment that promises well. It is a little fussy, so that I have hesitated in advising it. Where I have had it used the results have been encouraging, and testimony to its efficiency has been given by several writers other than its distinguished introducer. Now the majority of you here have dandruff to greater or lesser extent, and I would urge you to make a note of this plan, if you have not already taken it from some medical journal. And I would ask you not to stop there, but to go one better, and try the treatment on your own head; and afterwards report to this society the results of your experience. I see more than one head before me that looks as if it might be better covered with hair. Let me stimulate you to try this plan of treatment by telling you that I have seen it cause the scalp of one physician to take on a revigorated growth of hair.

LASSAR'S TREATMENT.

Wash the head thoroughly for ten minutes with Packer's tar soap. Wash out the lather with plenty of warm water followed by cold water. Dry the hair and apply;

℞
Hydrarg. bichlor. - - - gr. x
Glycerin. - - - -
Spirit. vini rect. aa - - - ℥ii
Aq. destil. - - - - ℥v
M.

Follow this with

℞
Napthol - - - - gr. xv
Alcohol. absolut. - - - - ℥iv
M.

Rub this in till the hair is dry, and then apply

℞
Acid. salicylic. - - - - gr. xxx
Tinct. benzoin. - - - ʒi
Ol. ped. taur. vel - - - -
Neats foot - - - - ℥iii
M.

The whole process is said to take about fifteen minutes, and to be very agreeable.

This plan of treatment would be rather troublesome for a woman to carry out on account of her hair being long.

Thus far I have said nothing of the treatment of seborrhœa of the body and face. All that need be said is that it is upon the same lines as that for the head. Only that on the body we can use an ointment instead of an oil.

For the seborrhœa of children, usually all that is required is to keep the scalp well oiled with olive oil. If this does not cure, then a mild sulphur ointment with vaseline may be used.

For seborrhœa oleosa, dabbing ether on the part will most promptly remove the greasy look. Washing with soap and water will act as a stimulant, and powdering with sulphur and starch will prove curative.

In all forms general treatment will be called for if the patient is out of tone. General tonic treatment is required in nearly all cases of seborrhœa oleosa.

Now, gentlemen, I thank you for your courtesy in listening to me, and I hope that I have not been carrying coals to New Castle, but that what I have been able to tell you will serve both to contribute to your personal well being, and to the size of your balance in the bank.

14 East 31st Street.

ARTICLE II.

HOW SOON AFTER DELIVERY DOES THE RESPONSIBILITY OF THE ACCOUCHEUR CEASE?*

By HENRY C. COE, M.D., of New York.

In casting about for a subject for a brief practical paper, it occurred to me that this question was one the proper answer to which was of no small interest to every practitioner. There is constant complaint among the general profession that gynæcologists frequently shake the confidence of patients in their medical attendants by informing them when consulted on account of some pelvic trouble of puerperal origin that "they were neglected after confinement." I regret to say that this is too often the case, and though the information is frequently true, it is none the less gratuitous on the part of the specialist. Whether a man is a "new code," an "old code," or "no code at all," the ordinary principles of honor should lead him to keep his thoughts to himself if their outward expression tend to injure the reputation of a fellow practitioner, whether he lives on Fifth Avenue or Avenue B. The more prominent the specialist the more delicate should be his sense of courtesy. But, it must be confessed that it is difficult at times to avoid expressing oneself somewhat emphatically regarding the obvious neglect on the part of the accoucheur. Men excuse themselves for not examining their patients on the ground that they are not gynæcologists. A man who does not know enough about gynæcology to recognize a puerperal lesion and to avert, at least to some degree, its consequences has no business to practice obstetrics. The divorce of these closely allied branches of medicine is unnatural; I do not see how either can advance without the other. Only by a thorough knowledge of the pathology of labor and the puerperal state can we grasp the first principles of gynæcology, only by a thorough appreciation of the remote results of puerperal lesions can we know how to avoid them. Unfortunately many practitioners lay aside their knowledge of gynæcology when they attend a case of labor. If this were not so, it would not be necessary to ask the question which forms the title of this paper. When we recall how prominent a place parturition and the puerperal state occupy among the list of etiological factors in many, one might say in most, pelvic troubles, we cannot help asking: "Is it necessary that a 'physiological process' should be followed by such serious consequences? Will not proper care of a woman, even after a difficult labor, avert many of the after effects which render her an invalid?"

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* Read before the Section on Obstetrics, New York Academy of Medicine, February 27, 1890.

I firmly believe that, however extensive may be the puerperal lesions which occur at the time of delivery, careful attention to the patient subsequently will in many instances, so effectually remove all traces of them that she will not require the attention of the gynæcologist. I might cite numerous cases to support this opinion, but it seems hardly necessary to do so, since I am sure that most of my hearers entertain no doubt as to the truth of the statement. I shall not dwell upon the immediate treatment of lesions of the genital tract. It would seem superfluous to call attention to the propriety of the attendant satisfying himself as soon as the third stage of labor is completed (especially if the delivery has been instrumental), whether there is any laceration of the perineum or not, but I am convinced that there are still excellent practitioners who pay as little attention to this as does a midwife of average intelligence. When it comes to lacerations of the cervix, I doubt if one man in ten thinks of looking for it. A few days since I examined a young married lady whom I delivered of her first child with forceps just two years ago, causing a slight tear of the perineum, which healed perfectly with three or four sutures. Six weeks after confinement involution was perfect and her pelvic organs were practically in a normal condition, so much so that she was quite well and became pregnant again seven months later. She was confined six months ago, being attended by an excellent practitioner and having a rapid and easy labor, in marked contrast with the former one. She has never been well since, has constant dragging pains in the pelvis, menorrhagia, loss of appetite and spirits, cannot walk even a short distance—in brief, the bright, healthy girl of two years ago is a thin, sallow invalid. I examined her the other day and found a bilateral laceration of the cervix with an extensive erosion which bled easily, a laceration of the perineum and colpocele, while the heavy, subinvoluted uterus had sagged below its normal plane—in fact, the whole situation had changed since I last saw her. How account for the change? With all charity, I can attribute it only to the fact that nature had been given too much latitude in her attempt to repair puerperal lesions which were doubtless unrecognized by the accoucheur. This is only one example of a thousand, but I mention it because it is so typical. I tried to be just to him, but how could I help explaining to the patient the cause of her ill health?

I know that it is the fashion for many to urge the trite arguments against so-called "meddlesome midwifery" as an excuse for letting the patient severely alone. But what kind of logic is it which infers that, because our robust grandmother suffered only temporary inconvenience from child-birth, therefore, the women of the present generation ought to be treated as if they were cast in the same rugged mould, or that because a Bohemian peasant can get up two or three days after delivery and go to work, therefore, an American woman can take care of herself after the sixth, or at the latest, the ninth day? It is such reasoning as this which has made the new science of gynæcology so profitable.

I shall not discuss the propriety of rigid antisepsis during labor, its results are so obvious, that it needs no advocacy. There is a general tendency, even on the part of those who adopt strict antiseptic precautions during parturition, to relax their vigilance during the puerperium. It is *after* delivery that the advantages of this treatment are most apparent. How often have I seen a smooth convalescence follow a severe instrumental labor in which the soft parts were extensively lacerated, the wounds healing by first intention without elevation of temperature, all the result of such precautions!

In the maternity hospitals with which I am connected, such a result is regarded as a matter of course. Non-union, after suture of a lacerated perineum, is a cause of reproach to the house physician.

Before giving my idea of what constitutes the whole duty of the accoucheur in connection with a confinement case, let us see what is the ordinary practice among physicians. I do not mean among the poorer class of patients, but even among those who are well-to-do. After delivery, a bichloride douche, may, or may not, be given—most often not. If the perineum is badly torn, a few stitches may be hastily introduced, composed of ordinary silk, taken from the pocket-case. The condition of the cervix is not ascertained. No attempt is made, at dressing the external wound, the napkin being applied directly to it. If the laceration has extended through the sphincter, even if the ends of the torn muscle have been united, it is taken for granted that it will not heal, so that no special attention is paid to the obtaining of an easy evacuation of the bowels. The bladder is attended to, (if convenient), sometimes being allowed to remain distended for hours, before the catheter is passed. Unless serious septic symptoms develop, no vaginal douches are given.

The patient is visited twice daily for the first four or five days, then once a day, until the traditional "ninth day," when, (yielding to the popular superstition), the attendant congratulates himself on the successful termination of his labors, and, if he makes any further visits, they are merely perfunctory, and are not made for the sake of assuring himself of the *local* condition of the patient. About the ninth or tenth day, she is allowed to leave her bed, and at the end of two weeks she is "up and about." If she complains of backache, bearing-down pains, and profuse lochial discharge, she is assured that these are the natural consequences of parturition, and will right themselves in time. I do not think that this picture is over-drawn.

Busy practitioners, among the poorer classes, are still more lax in their attentions. I venture to say, that it is the exception for the attendant (even among wealthy patients), to satisfy himself, by personal observation, four or more weeks after delivery, as to the progress of involution, and its retardation by puerperal lesions. This is a study, which is relegated to lying-in hospitals. He is willing to accept the statements of the text-books, with reference to this point.

What is the contrary view of the duties of the accoucheur? I simply present my own, as I understand it.

A woman, rich or poor, (let us say a primipara), is delivered with forceps, sustaining a considerable laceration of the perineum and posterior vaginal wall, and it may be an injury of the pelvic diaphragm. The placenta is expressed, and the uterus contracts well, but there is still considerable oozing, leading to the suspicion that the cervix has also been lacerated. The latter lesion would, of course, be injured, if the forceps had been introduced within the partly dilated os. Having cleansed the parts with an antiseptic injection, the attendant introduces his finger (thoroughly disinfected), and assures himself of this fact, because he may not have another opportunity to do so for several weeks. Under constant irrigation, if practicable, he repairs the perineal tear, using silk, which he takes from an antiseptic solution in which it is kept, and *not* from his pocket-case. He introduces the suture, just as carefully as if he were doing a secondary perineorrhaphy sewing up the tear in the posterior wall, with a continuous suture, if necessary.

If the laceration extends through the sphincter, the ends of the muscle are brought together with silver wire, with the idea of obtaining primary union. I have seen such a result occur, even in the case of a patient who was in such a desperate condition after an obstetric operation, that the delay incident to the perineorrhaphy, seemed to be unjustifiable. She lived to thank me for saving her from a subsequent one. Having sutured all extensive tears, the accoucheur gives a thorough vaginal injection, introduces an iodoform suppository into the cervix, powders the perineal wound with iodoform or boracic acid, and applies to the vulva a regular surgical dressing, moist or dry, as he may prefer. I know nothing better than Garrigues' antiseptic pad, though I have used, with equal satisfaction, pads made of dry absorbent cotton, wrapped in sterilized or bichloride gauze. The pad is held firmly against the perineum in such a way as to give support to the relaxed pelvic flow. The bladder is emptied every six hours, at first by a *clean soft rubber* catheter; as soon as the patient can pass her water, the vulva is cleansed with carbolized water; every time that she does so, fresh iodoform is powdered over it, and a clean dressing is applied. The bowels are moved freely, within at least forty-eight hours after delivery. In addition to the above, if the cervix is lacerated, I give, myself, (or direct the nurse to give it, if I can trust her) a hot vaginal douche of carbolic or bichloride twice daily, introducing an iodoform suppository into the cervix, once in the twenty-four hours, and this I continue for at least a week, afterwards giving only one douche daily for two or three weeks more. I know that some may object to this practice as unnecessary and even harmful, but I am satisfied that by adopting this plan, we not only prevent septic trouble during the puerperium, but in the majority of cases, secure healing of the wound without the attendant parametritis which is really the most serious and permanent result of laceration of the cervix, as well as normal involution. In order to promote involution, the patient takes thrice daily, a pill containing strychnine and ergotin, which is continued for a month. The care of the breast is regarded as one of the most important duties of the nurse, nor is her vigilance suffered to relax as long as she remains with the patient.

The stitches are removed at the end of a week, and the same treatment is continued for another week, the temperature being taken night and morning, at the expiration of which time the patient is allowed to change from the bed to the sofa. If she suffers any pain from the transfer, she goes back to bed and stays for a few days more. At the end of three weeks she may walk about on the same floor, but not go down stairs. If the uterus remains large and there is a tendency to retroversion, (especially if the displacement existed before), a suitable pessary is introduced, to be worn two or three months if necessary, on the principle that "a stitch in time saves nine." At the end of the fourth week the patient may ride out, and during the next fortnight she gradually returns to her usual occupation, though she remains under the eye of her physician for at least a month more, being requested to come to his office for examination in case any bad symptoms arise, such as constant backache, pains in the groins, metrorrhagia, profuse leucorrhœa. It is only by keeping this patient under such careful and extended observation that the attendant can be sure that she has made a perfect recovery, and has no lesion which will give her trouble subsequently. If he discovers a laceration of the cervix or perineum, retro-displaced uterus, diseased or prolapsed ovaries or tubes, or evidences of localized perimetric inflammation, he should tell the patient frankly, not only for her sake, but for his own. Certain local complications demand special care. If the patient is known to have had pelvic trouble before she became pregnant (and this fact should be positively ascertained), the wise physician will employ added care, in order that the former condition may not only not be aggravated, but so that it may even be relieved by the process of involution. This subject is too extensive to be discussed here. I refer you for full information to a paper by the late Dr. James B. Hunter, on "Pregnancy as a Complication of Pelvic Disease," (*Trans. Am. Gyn. Soc.*, 1888.)

I shall only touch upon pathological conditions which are the direct outcome of the present, and not of former, labor. Mild forms of septic infection, leading to localized indurations at the basis of the broad ligaments, are quite common and are frequently overlooked by those who explain slight elevation of the temperature during the puerperium as due to lactation, malaria, constipation, etc. In every instance think first of sepsis, and if it can not be excluded (and here I do not refer to obvious endometritis), proceed with frequent hot vaginal douches, as in the treatment of parametritis following trachelorrhaphy. A patient who has had even a transient threatening of parametric inflammation should be viewed with suspicion. The accoucheur who allows her to leave her bed on the tenth, twelfth, even on the fourteenth day is taking a considerable risk, as I have learned to my sorrow.

When we come to tubal trouble (and this is unquestionably more common after delivery than we ever dreamed of a few years ago), it seems superfluous to urge the necessity of prolonged rest in bed and the most careful treatment in order to prevent what may be at first a catarrhal salpingitis from developing into pyosalpinx with all its attendant dangers. This is especially true after abortion, a consideration of which would carry us beyond the prescribed limits. Oöphoritis followed by hypertrophy and prolapse of one or both ovaries is another condition which is frequently referable to the puerperium, especially to retarded involution, aside from any septic infection. We must guard against it by adopting the measure already referred to which favors restoration of the uterus to its normal condition, the proper repair of lesions, rest, hot douches, and improvement of the patient's general condition.

I am convinced that retroversion, with more or less marked prolapsus, is a not infrequent sequela of normal labors, and base my opinion not alone upon observations made in private cases, but upon the results of routine examinations in the convalescent wards of lying-in hospitals. It is only surprising to me that it does not occur more frequently. The treatment is obvious; rest, and the use of a suitable pessary until the uterus is able to stand alone, with ergot and hot water douches to reduce the size of the organ. Few patients will object to a pessary when it is explained to them that it is only to be used temporarily and to prevent more serious future trouble. Moreover, those who are most impatient at being kept in bed beyond the usual period of convalescence, will be the first to blame the attendant for allowing them to get up too soon. A symptom on which I would lay considerable stress as indicating the necessity for an examination and local treatment is slight, persistent metrorrhagia, continuing for weeks after delivery. It certainly shows that something is wrong, and the attendant is not doing his duty who dismisses it as of no consequence, and allows the patient to go about and attend to her usual duties. In my experience a flow of blood persisting after the fourth week generally means that the patient has an eroded cervix, a large, congested uterus, often retro-displaced and a resulting hyperplastic endometritis, conditions which are readily amenable to treatment, but which become aggravated with each week that they are neglected. As direct consequences of an abnormal puerperium they should certainly claim the attention of the accoucheur.

It will be noted that in this brief résumé I have neglected to discuss two important questions: the management of serious septic conditions following parturition and the after treatment of cases of abortion. The former is passed over because I assume that every intelligent practitioner at the present day will recognize and rigorously combat puerperal septicæmia, whereas he may fail to recognize or may under-estimate local complications, the results of which are remote rather than immediate; the latter I omit because it involves a number of important points, the proper consideration of which would require a separate paper, in fact the subject has already been ably discussed by Dr. Murray at a recent meeting of this section. I can only say in passing that I believe that the majority of the more serious intra-pelvic inflammatory conditions, especially pyosalpinx, are directly traceable to neglected abortions, and that it is not necessary in the case of married women to seek for a gonorrhœal origin.

To gather up the scattered threads of this paper, let us return to the original question: How soon after delivery does the responsibility of the accoucheur cease?" It is not measured by days or by weeks. It ceases only when puerperal lesions have been repaired, their evil consequences averted, and when he is assured that either his patient will not require the services of the gynæcologist at all, or he will be prepared to refer her to him after explaining to her clearly the nature of her trouble and its relations to parturition. Only in this way can he hope to escape the implacable resentment which women feel for the attendant to whose neglect after confinement they attribute all their subsequent ills.

ARTICLE III.

EYE SYMPTOMS AS AIDS TO DIAGNOSIS.*

By the late DAVID C. COCKS, New York.

"Doctor! I know nothing about the eye, and what's more, I don't want to know," was the answer I received from an active practitioner of this city when the subject of disease of the eye was spoken of. This opinion, out spoken in this instance, is that of a large number of medical men, who indorse it by their actions but carefully avoid doing so with their lips. I believe this to be due to a lack of appreciation of the important bearings that eye symptoms have in diagnosis and treatment. Many physicians feel that the eye is too delicate an organ to be treated by any but the specialist; and with the determination to turn all such cases over to the specialist at once, they feel their conscience clear to let its anatomy, physiology, diseases and treatment drop entirely out of mind; forgetting how important a knowledge of the eye and its diseases is in the diagnosis of those diseases which they are daily called upon to treat.

I therefore propose to bring to your notice an outline of the more important facts about the eye and its diseases, a knowledge of which is essential or helpful in diagnosis.

Diagnosis is sometimes made from one pathognomonic symptom, at other times it can only be made by the careful study of the symptoms for months or years. It therefore goes without saying that an organ such as the eye that gives pathognomonic signs in some cases, and in others, symptoms which prove to be the key to the situation, can not well be turned over to the specialist on all occasions.

We will commence the discussion of this subject by briefly discussing the diseases of the lachrymal apparatus. The lids, the orbit, the muscular apparatus, the cornea and sclera; the uveal tract (iris, ciliary body, and choroid) the lens, the vitrious, the retina and nerve; and then if time permits a view from the opposite stand-point, taking individual diseases and discussing the importance of the eye symptoms that may arise in connection with them.

Epiphora is at times the first symptom of *facial paralysis*, the weakened orbicularis failing to keep the puncta in contact with the globe the tears flow over the cheek.

In acute inflammation of the lachrymal gland, there is frequently an attending fever, but the presence of the localized swelling and pain suffices to make known the cause of the febricula.

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* Read before the Section on Theory and Practice of Medicine, of the New York Academy of Medicine.

The presence of dacriocystitis indicates something more than a localized inflammation of the lachrymal sac. It indicates an obstruction in the canal or sac and its most frequent cause is a neglected nasal catarrh ; if this is excluded *exostosis* and periostitis the results of syphilis is probably the cause of the trouble and where the inflammation persists in spite of judicious treatment we will sometimes find other constitutional trouble to account for it, as in a case now under treatment diabetis mellitus has prevented the favorable termination looked for.

Herpes zoster ophthalmicus is pathognomonic of changes (probably inflammatory) in the *fifth nerve* and gasserian ganglion.

It is frequently mistaken for *erysipelas* although its situation on one side of the head, its vesicles being developed only over the distribution of the fifth nerve, should prevent such a mistake. The persistant neuralgia which follows this disease can not be satisfactorily accounted for when the error in diagnosis has been made and thus forms an additional reason for care in recognizing the disease.

In the clinic of Dr. H. D. Noyes, I saw a man with one eye destroyed and that side of his head seamed with scars over the distribution of the fifth nerve, who came with the history that he had just recovered from a severe attack of erysipelas and a few days since a young lady came to me with the characteristic scars over the right eye of herpes zoster and a statement from her family physician that she had had an attack of erysipelas.

The universally know symptom of Bright's disease, *morning œdema* of the lower lids should not be passed by without mention. The reddened margin of the lid (blepharitis marginalis) indicates a lowered condition of the general system as well as error of refraction, chronic conjunctivitis or muscular insufficiencies. *Pediculi of the cilia* easily seen by oblique illumination sometimes mistaken for blepharitis marginalis are probably associated with others on the pubis.

The primary lesion of syphilis is sometimes found on the eye lid or its margin and the history of an indurated sore of this region should be carefully investigated.

Ptosis by itself may mean pressure by syphilitic or rheumatic swellings, a trauma (such as fracture of the apex of the orbit), or a neuclear trouble suggestive of general or posteror spinal schlerosis.

The exophthalmos of Grave's disease gives the diagnosis of this condition even before the history is taken.

Exophthalmos of both eyes may indicate the presence of œdema and cellulitis of the orbit associated and dependent upon a thrombus of a cerebral sinus.

When exophthalmos is limited to one eye we may have tumors of the orbit or its neighborhood or a syphilitic periostitis or even an orbital hæmorrhage from whooping cough. This last may not aid in the diagnosis of pertusis but it is a fact worthy of being known as occasionally happening in that disease. As an illustration of exophthalmos following an injury of the head, I relate the following case: In December 1888, Morris Q. æt. 9 years, was struck on the right side of his forehead and cut by a tie falling from the elevated R. R. He was in the hospital for about 10 days. In August, 1889, exophthalmos commenced, the right eye being carried downward outward and forward. There is tenderness and pain on pressure. The ophthalmos cope shows the nerve to be normal. A diagnosis of periostitis of the roof and apex of the orbit was arrived at. The interesting point being the exophthalmos resulting from an injury eight months before.

A very important group of symptoms is presented when we study the occular muscles in their derangements. As a whole they sympathize with the *general system.* The convalescent from an acute disease is cautioned not to read or write for some time after the disease has departed, because we all know that a strain of these small but important muscles is apt to be followed by disagreeable after effects; and so when an anæmic, asthenic or neurosthenic patient complains of headache, nausea, vomiting or pains through the temple or eyes, the general practitioner examines his or her eyes to see whether or no there is a harmony existing between the different groups of adductors or abductors before resorting to general medication for the trouble. Considerable attention has been given to this departement and I will dismiss it, simply saying that wonderful results are at times obtained by the relief of occulo-muscular strain where this has been the exciting cause of various symptoms in nervous individuals whose health has been below par or "in those," as Dr. H. D. Noyes so well puts it, "whose chronic low health, barely suffices to carry the person through the day's task; and leaves no joyous reserve for either recreation or further work." Dyspeptics, the fagged out votaries of exhausting pleasures, the men who sacrifice body and mind and family to business, sufferers from chronic uterine disease, the epileptiform and choraic, those who have come through seasons of exhaustion and night watching in exposure, in grief and bereavement and disappointment, such as are confined to labor in close rooms and for long hours, or who get an insufficient diet.

A careful examination of the muscles in these cases, and the correction of insufficiencies by prisms or tenotomies, will often give an entirely new aspect to cases that were formerly obscure.

Acute or chronic paralysis of the ocular muscles, takes us into an entirely new field of diagnosis. When all the external muscles of the eyes are paralyzed, we have ophthalmoplegia externa, a disease not of the eyes but of the central nervous system *i. e.*, of the nuclei of the 3, 4 and 6 in the floor of the fourth ventricle, and the acqueduct of sylvius. A recurring paralysis of the 4th, or 3rd, or 6th, is frequently the first indication of posterior spinal sclerosis, or of a general sclerosis.

The nerves which supply the ocular muscles, traverse the cranial cavity for such a distance, that, frequently, the first symptom of a basilar trouble, or intra-cranial disturbance is evinced by the paralysis of one or more, of the muscles supplied by these nerves; and the progress of such growths, can often be watched by successive muscles being involved, and the exact location of such neoplasm can be accurately marked out. The nature of the diseased condition whether gummatous, rheumatic or syphilitic periostitic, or a neoplasm, can often be diagnosed by the grouping of symptoms, aided by the condition of the muscles. It is not necessary to say anything further on this very important subject, except, that no one who desires to be an accurate diagnostician, can neglect the information afforded by the ocular muscles.

Last fall, I saw such a case, in the practice of Dr. Seguin, where the gradual extension of the basilar disease, was watched until the medulla was reached.

The conjunctiva lends many suggestions to the observant practitioner. From the slight hyperæmia of a fabricula, a scarlet fever, or the first stages of a meningitis to the mucopurulent conjunctivitis of measles; the dusky conjunctiva of typhus, or its swollen and chemotic condition in the moribund state.

Phlyctenular conjunctivitis is almost always indicative of lowered health, of eye strain, or unsanitary surroundings.

Chronic conjunctivitis has about the same significance, but is also associated with nasal or pharyngeal catarrh.

Sub-conjunctival hæmorrhages in pertusis are indicative of the presence of severe paroxysm while in the adult they seem to have no pathological significance.

An indurated ulcer of the conjunctiva as of the lid, may mean, and often is, the *initial lesion of syphilis.*

Phlyctenular-keratitis indicates either *eye-strain*, or this condition associated with reduced health, and unsanitary surroundings; and as far as being useful in diagnosis, its occurrence should direct the practitioner's attention to these causative conditions and their correction. Chicken-pox, measles and scarlet fever, sometimes precede this trouble.

Interstitial or diffiused keratitis always is indicative of some constitutional trouble. The great majority of these cases occur in persons under twenty; usually from 5 to 10 and are symptomatic of *congenital syphilis*, a smaller percentage is due to secondary syphilis, and still others to some form of discrasia, as to latent or *hereditary* gout. The presence of keratitis with hypopyon. indicates the presence of infection from some quarter, possibly a nasal catarrh, dacriocystitis, or carious teeth.

In these cases where the cornea sloughs away without pain or distress in old people, we may know that their vital powers are much depressed, and their blood vessels probably atheromatous.

When we find the cornea cloudy or ulcerated, the patient complaining of no pain or photophobia, we have a keratitis due to a lesion of the fifth nerve.

The ulcers of the cornea occurring in herpes zoster, small-pox, etc., are not, as a rule, helpful in diagnosis, as the other symptoms have already made the case clear.

Sclerititis and episcleritis rarely occur, except when rheumatism or the rheumatic diathesis is present. I have a patient, now under observation, in whom this is the only symptom present of rheumatism, and it is yielding to anti-rheumatic remedies, and her general condition is also improving.

THE IRIS IN DIAGNOSIS.

We must look at this membrane from two standpoints: First as a vascular membrane, the anterior part of the urea, and, secondly, as a muscular apparatus. From either point of view, valuable aids to diagnosis can often be obtained.

When we are confronted with an attack of iritis, it is necessary not to rest contented, because we can give a name to the evident condition, but to search for the cause of such inflammation. An enumeration of the numerous constitutional conditions which may cause iritis, will give some idea, how important it is to look into the case carefully. Iritis may be due to hereditary, secondary, or tertiary syphilis. It may be due to malaria, gonorrhœa, variola, rheumatism or gout. At the October meeting of the New York Ophthalmological Society, I reported a case of tubercular iritis in which Dr. Richmond Lennox, microscopically demonstrated the presence of the tubercular bacilli, and then an examination of the child showed the presence of a phthisical process in progress within the chest. A clear cut case where a diagnosis was arrived at through the eye symptom.

If we were all perfect and always made complete examinations of our patients, it would not be so necessary to dwell on these aids to diagnosis; but in my experience at least, it is the presence of some one suggestive symptom that has often led to a diagnosis where otherwise the case would have remained unsolved.

In the first stages of pachymeningitis hæmorrhagica the pupil is, as a rule, contracted and most markedly so on side of the hæmorrhage.

Myosis, contraction of the pupil, exists in the early stages of acute meningitis and with the other symptoms, gives valuable aid in its early recognition. So also in the first stages of posterior spinal paralysis, and when associated with this condition, we find the argyle Robinson pupil (*i. e.*, a pupil that contracts on accommodation, but not to the stimulus of light), we have almost, if not quite, a pathognomonic symptom of this condition.

When the cervical sympathetic is irritated, as by an aneurism or enlarged cervical gland, moderate myosis may call attention to the lesion. The myosis is moderate in amount and the accommodation is not affected.

I might speak here of the myosis of eserine and how that of opium is useful in diagnosis of the morphia habit and when a patient is unconscious, in diagnosing this condition from the coma of Bright's disease. When cerebral hæmorrhages occur the first result is contraction of the pupil, followed, as the hæmorrhage increases, by dilatation.

In complete paralysis of the third nerve there is mydriasis and paralysis of accommodation. I have had under my care cases of diphtheria which were not recognized as such until dilatation of the pupils and paralysis of accommodation had occurred. I was called to see a boy who had a slight fever and a sore throat, an examination revealed a pharyngitis, the tonsils being spotted with whitish mucus. I feared diphtheria but could get no evidence of it. The boy recovered, but in four weeks' time he came to me with paralysis of his ciliary muscle and iris, thus proving that I had failed to recognize the disease.

Another case showing the importance of eye symptoms in general practice. Ophthalmoplegia-intona points or rather proves, as does also ophthalmoplegia externa, the existence of a lesion of the nuclei in the floor of the fourth ventricle and in the aqueduct of sylvius.

The unequal pupil as a first symptom of general paresis is known even to the laity. We should always be on our guard not to mistake the mydriasis of atopia for that of disease. While on the other hand the following case shows the danger of an error in the opposite direction. A girl, æt. 3 years, was brought to me for incipient strabismus. I ordered atropia to be dropped into her eyes for a few days. That night the little one became suddenly very feverish. She was restless, thirsty, slightly flighty, her throat was sore, and a scarlet rash developed on her body. The parents passed a very anxious night, and were quite relieved in the morning to find that scarlet fever did not exist.

The existence of mydriasis together with other symptoms may clear up a doubtful case of tumor cerebri, or of syphilitic trouble of the base, or be indicative of a fracture through the apex of the orbit.

Headaches not yielding to ordinary treatment may be due to weakness of the ciliary muscle, and the recognition of this condition will lead to its cure. A few years ago it would have been necessary to have given illustration of this, but now it is not, as there is probably not one practitioner here who has not seen cases of recurring headaches, cured by properly fitting glasses, which had resisted careful medication.

We must now enter the eye to study the lens, vitreous, choroid, retina, and nerve, to see what aid they can give in diagnosis. The ophthalmoscope should be in the hands of each practitioner. The interior of the eye assisted by the mydriasis of cocaine which lasts but a short time, and causes but little inconvenience, can be readily examined. I have had medical students clearly describe the fundus of the eye after one lesson, and the general practitioner by the aid of the numerous and well-executed chromo-lithographs published with most works on the eye, can readily recognize the gross changes in the fundus which are needed as aids in diagnosis. I have elsewhere treated this subject at length and need not further refer to it here.

The last part of the uveal tract, the choroid, furnishes us several points in diagnosis. A choroiditis of the macula of each eye together or consecutively attended with numerous dust-like specks in the vitreous, is not infrequently met with, and is almost pathognomonic of syphilis either congenital or acquired. I have had under observation several such cases. Its early recognition is of the utmost importance to the patient; and as the changes can be readily seen (when looked for) he has a right to feel aggrieved if his central vision is lost through neglect.

About one year since a bright little girl, æt. 10 years, came with the statement that a black spot rested on the objects she looked at. An ophthalmoscopic examination under atropia revealed a choroiditis of the macula. She was seen by Dr. Noyes, who concurred in the diagnosis and recommended antisyphilitic treatment. This has been kept up to date with the result that vision is almost normal and her eye saved for more than useful vision, and the existence of a family taint revealed which should be of immense value in the treatment of the family.

We might speak of other forms of choroiditis, but time will not permit except to speak of that terrible symptom so destructive to the eye (and at times to life), metastatic choroiditis. This symptom may occur in puerperal fever, in pyæmia, in typhoid fever, and in cerebro-spinal meningitis, while, as a rule, the occurrence of this symptom in the course of the disease is only confirmatory of a diagnosis already made. I have elsewhere reported a case which came to me for treatment of an eye trouble which proved to be this form of disease, and its presence proved the preceding sickness to have been a mild case of cerebro-spinal meningitis instead of a febricula, no characteristic symptom being present except this.

In regard to the normal fundus I would say that its negative value in diagnosis can only be appreciated by those who are accustomed to look to the ophthalmoscope to aid in diagnosis. A case recently presented itself. A brother practitioner requested me to see a patient of his (he being unable to attend.) I called. On asking what the patient desired to see the doctor for, he said: "Doctor, I am blind, and have been gradually getting so for several days." The ophthalmoscope showed media and fundus to be normal, thus enabling me, after an examination of the urine, to make the diagnosis of uræmia amblyopia, which could not have been made if the ophthalmoscope had not shown the fundus to be normal.

A rapidly-forming or soft cataract may be the first symptom that attracts attention to the presence of diabetes mellitis.

The presence of a soft, opaque lens, with a scar in the cornea, while proving that an injury has been inflicted, may also indicate the presence of a foreign body in the eyeball, which will require immediate attention.

Probably the most interesting part of this subject is the light thrown on intra-cranial changes and on general diseases by changes in the retina and nerve.

The neuro retinitis of morbus Bright, with its accompanying and almost pathognomonic changes in the neighborhood of the macula are well known, and are of enough importance to demand the attention of every physician, if there were no other changes to be seen within the eye. The retinitis of syphilis, while not so distinctive, yet, the changes being seen, should, if not understood, be referred to the specialist.

Optic neuritis, especially if double, is one of the greatest aids to diagnosis; and to illustrate this the narration of a typical case may be in order:

Mrs. L., æt. 45 years, had vomiting, slight headaches, at times with vertigo, for five or six years. She passed from physician to physician without a clear diagnosis having been made, when I saw her. After careful observation of the paretic ocular muscles, etc., and finding the fundus normal, I came to the conclusion that the case was one of incomplete ophthalmoplegia externa, and the lesion therefore nuclear. In this opinion Dr. Sacks, who saw the case with me, agreed. October 26th I found double optic neuritis, which overthrew the nuclear theory, and established that of a slowly-growing neoplasm.

This one added symptom which the eye supplied was under the circumstances more important than all the others put together, while, on the other hand, without them it would only have been suggestive.

Atrophy of the optic nerve is one of a series of symptoms which may prove the previous existence of cerebro-spinal meningitis, basilar meningitis, gumma in the same region, alcoholism, fracture of the base of the skull with involvement of the apex of the orbit, tumor of the base pressing on the nerve or chiasm.

The ophthalmoscopic appearances of this condition are quite characteristic.

In infirmary work oftener than in private practice do we have cases of atrophy of the optic nerve which prove to be cases of cerebro-spinal meningitis, the atrophy being the only lesion left indicative of the preceding trouble.

Going now to the subject of disorders of function we enter a very interesting field.

At times, on examinining a patient who complains of failure of vision, we find that he has a central scotoma for red. This is almost pathognomonic of tobacco poisoning.

A short time since a publisher called to see me, stating that his vision had failed rapidly, and that now he could not read fine print even with the aid of a magnifying lens and his own glasses. The ophthalmoscope showed a hyperæmia of the nerve and the field a central scotoma for red. Stopping his tobacco and giving him strychnia his vision was soon restored to the normal.

Night blindness (nectalopia) occurs in commencing atrophy of the optic nerve, in extreme cases of anæmia from fasting, and in retinitis pigmentosa.

Word blindness (analexia) accompanies as a rule lesion of the cortex cerebri in the gyrus.

Acquired, partial or complete, color blindness is indicative of nerve atrophy.

For practical purposes the field of vision can be tested by the hand moved into different parts of the field, while the patient keeps the eye fixed on the face of the examiner.

Limitation of the field is found in optic atrophy, and in glaucoma, in retinitis pigmentosa in these conditions the fields are regularly contracted.

When monocular hæmianopsia exists the condition is one probably of intra-ocular lesion as of detatched retina, but when binocular hæmianopsia is present an intra-cranial lesion certainly exists, and this lesion is along the optic tract or in the occipital lobe of the same side as the loss of vision. Dr. E. C. Seguin, as you all know, has developed and pointed out to us the full significance of this symptom, as well as that of the pupillary reflexes; so that it will be unnecessary for me to further dwell on these important symptoms.

There are only one or two more points that I wish to call your attention to and I will have done.

In Bright's disease, especially in the acute attacks, the patients suddenly become completely blind without a lesion of the fundus. The difficulty is evidently central and due in all probability to an œdema of the centres for vision. It should be distinguished from the loss of sight in albuminuria retinitis, and can easily be, by the ophthalmoscope.

Acute glaucoma is sometimes mistaken for a billious attack or hemicrania, and chronic glaucoma for incipient cataract. The increased tension of the eyeball, the dilated and immobile pupil, the limited range of accommodation, and the contracted field would soon settle the diagnosis, even without the aid of the ophthalmoscope were these signs looked for.

And now, hoping that this brief and superficial glance at the aids which the eye gives to the general practitioner in diagnosis will stimulate each one to a renewed sense of responsibility, at the same time feeling that this is a fountain of knowledge from which aids to diagnosis flow freely and is easy of access to each and every one, I leave the subject to you for discussion.

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ARTICLE IV.

THE PHYSIOLOGICAL, PATHOLOGICAL AND PSYCHOLOGICAL BEARINGS OF SEX.

By SAMUAL S. WALLIAN, A. M., M. D., New York.

Nature's prime object, her one incessant and unconquerable effort is procreation. To accomplish this end she everywhere sacrifices time, comfort, justice, mercy— even life itself.

Emerson says: "In most men sex and digestion absorb the vital force." And notwithstanding the fact that digestion is the prime essential of all animal life, this astute observer of human nature and profound analyzer of natural phenomena, rationally gives priority to sex. The sexual instinct dominates all animal life, and compels observance of its laws, even in the vegetable kingdom.

It is this instinct which fires the heart of the warrior, whether hazarding the dangers of the chase, or battling for his hearthstone, and defending those he loves. It steels the heart and arm of the gallant knight as he enters the lists, clad in the colors of his lady-love, and inspires the genius of the poet as he recites his tale of chivalry and love.

It builds homes, rears children, makes systems of government a necessity, and civilized society possible. It instigates, permeates, and perpetuates all love, whether fraternal, parental or marital, and there is no known religion in which it is not prominently recognized and constantly exalted. The fatherhood of God is a catch-word in all creeds, and the pitying all-mother is the glorified central figure of one of the most popular Christian sects.

It is the foundation and inspiration of all the music, poetry, romance and sentiment in the world. If it were possible to expunge its influence from literature, libraries would be dwindled to a meager collection of dry-as-dust essays, read only by ascetics and bibliomaniacs. The future destiny of an entire people often hinges on the accidental sex of some unborn child, itself the result of momentary and unthinking sexual ardor, which thus becomes the potent factor in perpetuating or destroying the equilibrium of nations, empires or republics.

Thus, the ultimate influence of sexuality dominates all literatures, all religions, all earthly dynasties. Without it, poetry, romance chivalry and heroism would have been unknown. Eliminate woman, love, sexuality, from the books of Confucius, the Talmud, the Zend-Avesta, the Koran, the Bible, none of these wonderful works would have survived the generation in which they originated. Rob Homer and Tasso, Ovid and Virgil of that passion which is but an expression of sex; expunge all reference to the amorous impulse from Milton, Dante, Shakespeare, Byron and Moore,—there would not be sufficient substance left from which to construct a single sonnet. Remove its direct and indirect influence from all religious systems, sects would be obliterated, and churches would soon become extinct through a process of moral dry-rot. Instance the Bible:

The burden of the Mosaic law is directed toward the relation of the sexes, the questions of race and family, the suppression of adultery, fornication and licentiousness.

Wisest of men, Solomon, could tolerate existence only through the comforting aid of hundreds of wives and countless concubines. Abraham, the revered patriarch, who had been exalted to the position of a demigod, failed of desired issue until he had trained his virile powers in the adulterous arms of his fair handmaid; and beloved Absalom lost his somewhat reckless, but promising young life, indirectly or directly, from too frequent dalliance with Judea's girls.

Paul launched his most eloquent phillipics against the concupiscent tendencies of the age in which he lived, and, on the whole, leaves us to rationally infer that he reflected something akin to personal experience when he asserted that it was better to marry than to burn.

The marital life of Adam and Eve was Milton's dominant theme, and Satan, prowling in the Garden, experienced a very climax of envy and despair when he stumbled upon the happy pair, as it were, *in flagrante delicto.* Milton even attributes the origin of Death to the incestuous sexual ardor of Satan with his daughter, Sin.

Without the stimulus and impulse of this universal passion, religions would lose all human interest, society would lapse into inanity, courts would languish for want of causes, law libraries would grow musty from disuse, and clubs would become obsolete for want of topics to discuss, even for lack of suggestive embellishments for their parlor walls.

It is this impulse which gives energy and direction to enterprise, builds cities, inspires the dramatist, and peoples theatres, opera-houses and fashionable watering places.

Emasculate the dramatist and the stage would be annihilated. No true poet ever piped in sickly falsetto; no eunuch has ever attempted an epic or an epithalmium. Eliminate the element of sexual passion from the works of the world's great musical composers, and the director's baton would forever fall from his nerveless hand; music would become a lost art, since music is the spoken language of the affections.

Sex, then, is metaphorically, as it is physically, the sub-structure from which is derived every impetus of human progress.

Every species, with a few unimportant exceptions, is composed of male and female members in about equal proportions. The male element has been compared to the positive and the female to the negative forces in nature; but this comparison is not particularly apt. The male is usually, but not invariably the stronger, fiercer, and more aggressive, the female the weaker, gentler and more passive individuality. In the human race how much of this diversity is due to the influence of accident, training, custom, or to *dress* is still an open question. Certain it is that neither element can be long debased without eventually dragging down the other. It would be well for social scientists to ponder this fact. Putting it in the language of the Concord Philosopher: "If you put a chain around the neck of a slave the other end fastens itself around your own."

Sexually considered, the matrix (woman) is more vitally important to the future of the race than the moulder (man). But there is no separating the elements. Positives and negatives, segregated, both become passive and inert. The condition is one of unity in duality, and cannot be otherwise considered. Hence no argument is either pertinent or permissible, and all the heated and ill tempered wrangling as to capabilities and "rights" are out of time, and worse than wasted effort. To damage or disparage either factor damages the race, as a resultant product.

In the brute creation the sexual impulse is controlled entirely by instinct, as are the other animal functions, eating, sleeping, and defecation. Whenever this instinctive impulse is aroused the animal gives his whole attention to its instant gratification. Human beings, on the contrary, in proportion to their individual culture and refinement, are presumed to temper instinct with sentiment and reason. In other words, instinct becomes secondary to reason. Hence, eating is not indulged wholly to gratify the palate and the demand for food, as with brutes, but the dinner table becomes a forum for social and intellectual exchanges, for sallies of wit, and bursts of eloquence, for serious discussion, and trenchant literary criticism. Even defecation is attended to with set regularity, privacy and decorum. Strange that the one function on which the origin and perpetuity of the race depends should, more than all others, yet be left under the control of unintelligent impulse and unthinking passion; that this act alone, of all the bodily functions has seldom been made a subject of philosophic inquiry, but has been virtually left on its original animal or instinctive basis, while all other instinctive acts have been cultivated and elevated through the exercise of refinement and reason.

There is no sound moral or physiological excuse for this. The act is susceptible of being elevated, not only as a means of stirpiculture, but also as a source of both physical and spiritual enjoyment

Before discussing this question from a pathological point of view a few postulates may be laid down:

First.—Sexual congress is an instinctive and therefore natural function. Neither animals nor human beings need to be pre-instructed in order to accomplish it. Adam and Eve doubtless indulged the act with the same unshamed spontaneousness with which they ate or slept. Second.—Its object was, primarily and instinctively, the gratification of an impetuous, universal and natural desire.

The idea of progeny could not have entered the minds of the primitive man and woman, and only after reiterated observations could they associate the sexual act, as a cause, with parturition as a result.

Procreation is therefore only theoretically and not pratically the primary object of sexual intercourse; hence the act and all its relations, direct and indirect, as regards the health and happiness of individuals, and the moral status of community, should be treated from this standpoint.

Third.—In the present state of civilized society, the primary object of sexual intercourse is the same as in the beginning. Not one act, of many thousands, is undertaken with a premeditated view to procreation. On the contrary, the average couple take every feasible or known precaution to avoid the usual and legitimate results of intercourse. The enforced restriction and curtailment of the act which this effort compels, is at the bottom of much of the suffering and disease incident to married life. Both parties suffer.

In a physiological sense, partial gratification is quite as injurious and unsatisfactory as total abstinence; and the average married couple never gets beyond a feverish, imperfect, or interrupted form of indulgence. Hence the prevalence of married infelicities and infidelities. The unsatisfied male seeks the unrestricted and unapprehensive embrace of the courtesan; and the female either becomes an ascetic, or seeks other means for expressing the repressed forces of her nature —social gaiety, or religious fervor; or she, too, much more rarely than the male, indulges in marital wanderings.

It may be objected that on this socially "sacred" subject no tuition is necessary; that human beings, in common with animals, get on very well in this respect in spite of the prevailing ignorance; and that any effort to enlighten or to discipline them must partake of the nature of pruriency, impertinence, or even unchastity. But this argument is incompetent. If there is any one function that should be properly and perfectly performed, it is this one, as every physiologist must admit. Hence it will not absolve the medical man from all further responsibility, to say to the anxiously and blushingly inquiring bride and groom, "Go on and copulate to your heart's content; take no thought for the morrow. It is the ordained and natural way. Leave the results to Providence and the doctor."

This is, in substance, the advice usually given, and when followed makes the wife a child-bearing drudge and slave to the desires of her husband. Ignoring it as economically impractical, resort is had to makeshift and injurious methods of self-protection, the use of condoms, after-injections, villainous "female pills," or to actual fœticide.

Could the direct and remote results and dependencies of this passion and these practices be wholly abolished, the medical profession would have occasion to complain, with Othello, that at least a large proportion of its occupation was practically gone. Yet, far-reaching as are these results, the subject of sexology is more flippantly treated by social scientists, doctors, and divines than any other attribute of human nature. True, the bolder manifestations of social vice are spasmodically attacked and exposed, but in the main, the whole question is piously ignored, or is so mincingly and almost sheepishly approached that no good results.

In this connection no portion of community is so culpable as the medical profession. Community cannot be severely censured while the profession remains either so manifestly lame or so stupidly silent. The physician who writes or speaks intelligently and frankly on this subject, stands a chance of being virtually ostracised by a majority of his professional brethren or is at least looked upon as a "crank" and a bore. On the other hand it is no easy task for the most painstaking investigator to accumulate sufficient data on which to base conclusive deductions, for the manifest reason that, while to the pure all things are pure, even cultivated and pure-minded men and women have heard and known so much of concupiscence and sensuality in connection with this topic that they refer to it with a degree of hesitancy and semi-shame. They also instinctively shrink from imparting their personal experiences in this direction. Only the uncultured, immodest, or lewd members of society care to prate about their marital enjoyments or infelicities, or their sexual wants and conquests.

This is a touchy subject, but it is time to face the question fairly, frankly, and as it really exists, and not as it has traditionally existed or should theoretically exist. Hiding the head in the sand does nor avert the oncoming but unseen danger. Nor is it always or altogether from lack of moral courage that the physician hesitates to speak. As a rule he himself lacks exact knowledge, and is wanting in a proper appreciation of the dignity and importance of the subject. From his youth up he has been familiar with only its superficial and prurient phases. Nor is the average medical training calculated to inspire him with higher respect for chaste ideals. Too often its tendency is to lower his standards, if it does not even incline him to become a social and sexual freebooter. The prevailing false conceptions of modesty have their origin in false social training, and from the fact that the published data regarding sexual matters have been so largely derived from the experiences of the uncultivated, the lewd, and the vicious, rather than from respectable and cultivated people.

Thus medical students are set to study anatomy for the most part, over the dishonored bodies of prostitutes; this class furnishing a majority of the female subjects found on the modern dissecting table.

On the part of community there is a prevailing sense that the sacredness and privacy of the nuptial couch should not be desecrated or invaded, that the "rites mysterious of connubial bliss" should never be mentioned to alien ears, or exposed to the gaze of alien eyes. To a certain extent and in a general sense this is emphatically true; but there is a limit to reticence, and that limit is the line beyond which the moral and physical health of all classes involved inevitably suffers. False modesty ought not to be allowed to fill untimely graves with the self-immolating victims of unseen and unconfessed but nevertheless prevalent and fatal maladies.

The fashionable "decline" into which so many modern women of susceptible natures "fall," generally has its origin and perpetuation in disordered, perverted, thwarted or excessive sexual demands. Many married women are too proud to admit even the existence, much less the actual causes of their serious maladies, but bear their secret burdens with dumb endurance. Thus, ignorance and an over-weening sense of modesty and propriety are allowed to sap the lives of thousands and thousands of the most cultivated and sensitive wives and mothers in the land.

The names of the actual, tangible physical ills attributable to sexual want, sexual excesses, and sexual incompatibility, are legion, and to thoughtful medical men need not here be recited; but they are by no means of paramount importance. The mental and moral aspects of the subject are of even more serious import. What a prolific source of crime and misery, in all ages, has been the demon of jealousy! Murder in every horrible form, intrigue the subtlest, conspiracies inconceivably cruel, tortures too horrible to be recounted, among all nations, in every grade of human society, and in all periods of human history. All these have had their origin in jealousy; and jealousy is but one of the myriad expressions and out-workings of morbid or baffled sexuality. Men are not jealous of men, nor women of women, except when one of the opposite sex is involved.

Juno would have kept her temper unruffled, had it not been for the suspected liasons of Jupiter. Even Xantippe unquestionably had her savage instincts developed through crossed affections, or some other cause directly traceable to this part of her nature; while sexual ardor nerved the relentless hand of Lucretia Borgia, caused Cleopatra to apply the venomous asp to her voluptuous bosom, and indirectly rescued the fair Juliet from the portals of death itself!

That licentiousness and debauchery, disease and crime, have always been associated with the morbid manifestations of sexuality, is no reason why this vital subject, which underlies the foundations of society itself, should be left to the superficial, flippant and unscientific treatment of quacks and the professed promoters of lasciviousness and prostitution.

Again, as physicians, we only too well know that the evils of diseased and perverted sexuality are not restricted to the legally unchaste. It is a sad and shocking fact that the bridal veil is often but the drop-curtain which hides legalized but none the less beastly and shameful sensuality. The convenient cloak of matrimony too often covers a multitude of sexual sins. Moral chastity is much rarer than that which is merely fashionable, current and legal; since the prevailing standard is a false one. As the fashion now obtains, a chastity which is unquestionably moral and pure may yet be illegal; and there are many persons who are in no wise amenable to the ecclesiastic canon or civil statute, yet who are morally no whit better than the avowed prostitute.

Of ordinary and extraordinary gynæcological lore and gynæcological practice and mal-practice, we already have fairly too much.

It is clearly evident that when all has been said that can be said concerning the bearings of sexual commerce which accidentally or designedly results in offspring, the subject has been scarcely broached.

Medical works already treat quite at length of this aspect of the subject, and therefore, it is not a feature of the present inquiry.

Thus, also, the cruder forms of infectious venereal diseases have been much studied; and form a prominent feature in the curriculum of every medical college; but the non-infectious and obscure maladies arising from sexual crimes, mistakes, and ignorance,—their name is legion. They abound in every community, and in every grade of society, to an extent that ought to be actually alarming.

Again, thwarted or abnormal sexual impulse is the most prolific cause of insanity. Our asylums are populous with aberrant husbands, wronged wives, and heart-broken lovers; while the prevailing nervous diseases in general are largely the result of interrupted, thwarted, or inordinate sexual impulses. Hysteria is but another name for abnormal sexuality. Its subjects are usually overtasked wives, or the victims of false or inharmonious sexual relations, or of morbid sexual desires. It is not confined to women; and, in all, healthful sexual relations are absolutely essential to permanent intellectual vigor and spiritual health.

Admitting that all this and much more is literally true, the profession has done very little by way of enlightening the public on this vitally important subject.

Yet it is evident that its far reaching influences should be much more thoroughly investigated, and a morally wholesome knowledge disseminated. On the contrary, physicians limit themselves to the study of results, and to the purely medical and surgical bearings of the subject. Beyond a half-cautious and serio-sanctimonious warning as to the evils of fœticide and criminal abortion, very few medical men feel called upon to speak.

It is time that the profession should awake to the paramount importance of this tabooed topic, since it is evident that the preponderance of sexual sins are sins of ignorance. No reasonably sane man or woman would, knowingly, entail on him or herself perpetually increasing sexual misery, except through ignorance of the laws governing sexual health. The fact is, most laymen, and perhaps most physicians have fallen into the illogical rut of thinking that much sexual enjoyment implies excessive sexual indulgence; that the penalty for this is inevitable; and, hence, no one attempts to properly characterize the resultant evils, or enlighten the people.

Again, selfish interest tends to silence the voices and pens of those who certainly ought to speak.

The status of public sentiment on this subject is another obstacle to reform. There is an ingrained and inborn prudery prevailing, which stifles the few and hesitant endeavors of medical men who occasionally feel impelled to speak on this subject. Society cannot yet bear the whole truth, any more than all its doings can bear the broad light of day. No society lady wishes to be told that her marital practices and surroundings will eventuate not only in physical prostration, but also in mental and moral ruin. She demands and is willing to pay for a more effective "periodical" pill, or, to the end that her physician shall quietly, and without compunction, relieve her from the results of marital inadvertencies; or that her husband shall be provided with more reliable "safes;" or be actually or indirectly advised to secretly quench his excessive sexual fire in unholy foreign pools!

Happy is the man or woman whose sexual relations are entirely natural and healthful. But this does not consist in the mere absence of defined and recognized disease, and the possession of crude physical vigor. Nor is it more skillful, or hair-splitting and hazardous abdominal surgery that we need. It is the moral, æsthetic, or psychological aspects of the subject that need attention.

The first inquiry, on examinining a candidate for life insurance, or, for that matter, in any chronic disease, is: "Have you ever had any special ailment which you do not care to talk about at the breakfast-table or before the minister? When did you last have any disease of the urinary or generative organs?"

If the patient be a married woman: "How many children have you borne, and how many miscarriages have you had? Any disease of the abdominal or pelvic organs?"

Of course, any ordinarily considerate physician would hesitate to ask a respectable woman whether her marital habits and relations were regular and happy, whether reasonable or excessive, pleasurable, indifferent, or positively painful; but these questions would really be more pertinent than most of the interminable list usually propounded.

This only corroborates the assertion that, in the present state of society, the sexual instinct and the generative functions are more apt to be morbid and unhealthy than otherwise; wherefore it follows that indulgence, no matter how frequent or intense, is not necessarily satisfaction. The enjoyment afforded by it varies more than that from any other sensual or emotional source. The act itself may be the highest expression of pure and elevated love, or merely the boisterous exuberance of animal lust. Between these extremes are all degrees of variation. An intelligent few, happily mated, dwell perpetually in the region of the highest enjoyment. The many have never known its purest and most satisfying delights, but, rather, like the victims of lust in Dante's "Inferno," they are forever tortured with burning desire, which imperfect indulgence only whets, which leaves them cloyed rather than satisfied, and which is soon transformed into loathing and self-disgust.

The conditions for normal sexual relations are:

1. Physical compatibility. Aside from excessive disparity of size, a certain congeniality, not necessarily similarity, of temperament should exist. Couples too nearly alike are apt to breed both discord and unhealthy offspring; but a congeniality of leading tastes is a desideratum.

2. A certain spiritual affinity is absolutely essential. Measured by this latter qualification, all others are comparatively valueless. The nature of this affinity, so called for want of a better name, is not well understood; but it is certain that it is not mere animal magnetism, although it is frequently mistaken for it. Confiding and susceptible women meet a man who is full of animal life, whese glance, touch and tone are all magnetic, and straightway they yield themselves to the spell, and become as clay in the potter's hands. Too late they learn that ardor and affinity are in no sense identical.

Few men have given any thought to the study of *sexual honor*. In sexual matters woman, is, necessarily the passive or negative factor. Man is the aggressive and positive. It is so throughout the animal kingdom. The female, even in heat, runs or hides to elude the fierce advances of the male, and only yields through partial exhaustion, persistent solicitation, or actual force. The male knows neither discretion nor mercy, but is utterly inconsiderate of all else save immediate gratification. The picture is but little exaggerated as applied to the average male of the human species. Prompted by desire, his voice becomes plaintively tender, his whole nature glows, and he woos with an intensity which is fairly irresistible; but, once possessed of his object, his impetuousness knows no check; judgment and discretion are put in abeyance, and he becomes brutally oblivious until his exaltation culminates in a convulsive orgasm, by which his fierce energy is momentarily spent, and he lies gasping for breath, or stertorously sleeps off the stage of exhaustion, neither knowing nor caring for the physical havoc he may have wrought or the moral pain he may have caused.

With many women the act is not only devoid of romance and pleasure, but is a source of unmitigated disgust, and of acute mental and physical suffering. With others, indulgence is of the passive kind, and is so insipid and spiritless that abstinence is an easy virtue, and such subjects can have no charity for those whose sexual ardor transforms their hearts, as it were, into fire, and their blood into molten lava.

As a rule, the male is far more passionate than the female; but the rule is subject to the usual exceptions. There are women in whom the sexual passion fairly predominates. They may be outwardly virtuous, observing the proprieties enforced by society usages; but it is almost impossible for them to look on a comely man without ardently longing to embrace him. In some extreme cases they restrain themselves only by the most intense and constant effort of will, their whole natures being suffused, and passionate tears filling their eyes whenever they witness suggestive plays, or listen to passionate music. Many others who are, perhaps, in a certain sense, quite as passionate as the latter, do not themselves suspect the origin of their inner promptings and passion hunger.

Oliver Wendell Holmes, that keenest analyzer of human passion in its æsthetic aspects, says, in substance, "Blessed is the woman who can take refuge in music; it gives her an outlet which often proves a saving factor." And what braver utterance has escaped the lips of woman than that of Anna Dickinson, when, in a lecture on the social evil, delivered twenty years since, she said: "As human beings, as respectable men and women, let us not be prudes or cynics; let us frankly admit that we all have passions, and that there are times when it seems as if they would sweep away all barriers and assert themselves, in spite of the will, in spite of society, in spite of all practical or moral considerations. But we can, if we will, make them our servants instead of our masters. Instead of goading us on to sensual indulgence, and proving but a source of weakness, they can be made a source of strength and inspiration for our other work. We can find legitimate outlets for the lustful ardor that lurks in all our natures." I quote from memory—the sentiment, not the language.

It is easy to say that sexual intercourse *should be* indulged strictly for the purpose of propagating the species; but it is a fact that it is not so indulged, and will not be; therefore, it is stupid folly to ignore this fact, and make no provision for the results of such stultification.

The day will doubtless come when sexology will have its chair in every educational institution, especially in every medical college, and when no man, whether priest or physician, will hesitate to teach those laws which lie at the foundations of society, and on which hinges the progress, perpetuity and perfection of the race. When this degree of prominence is given to it, and only then, will knowledge on this subject advance to that degree which its importance demands.

But the subject broadens as we touch it, and it is scarcely necessary to say that in this imperfect sketch it has been but vaguely suggested. If, however, this suggestion shall have given the cue to a single other mind, so that profounder and more searching observations and investigations than have yet been recorded shall be undertaken, its object will have been accomplished.

119 East 28th Street.

ORIGINAL ABSTRACTS.

By Dr. Kirkland Ruffin, Norfolk, Va.

An Address on the Experiments on Anæsthetics Conducted at Hyderabad. By T. Lauder Brunton, M.D., LL.D., F.R.C.P. F.R.S. Delivered before the Medical Society of London, February, 1890. (*From the British Medical Journal.*)

Professor Syme used to say, that in all his experience, and in that of his colleagues, there had never been a death from chloroform, and that the reasons were twofold: first, very good chloroform was used, and, secondly, plenty of it was given. But deaths do occur occasionally even though the same chloroform as that employed by Syme is used, and it occurred to the author some years ago, that possibly one reason was the neglect of the second part of his advice—too little chloroform was given. The author thought that probably death was due to shock, for very often the deaths from chloroform were recorded as occurring just as the operation was begun.

Dr. Lawrie, on account of great reverence for his teacher, Professor Syme, instituted a number of experiments, to show that his teachings were correct, and that in giving chloroform, we should watch the respiration, and never mind the pulse; and a number of experiments were made by the Commission in Hyderabad, which confirmed Syme's conclusions as respiration invariably failed before the heart did in animals, to which chloroform was given. On the first series of experiments 141, and in the second 430, animals were used, and the result was always the same, in all the respiration failed before the heart. The profession has two distinct theories, as to the action of chloroform; the one generally adopted in Edinburgh, is that chloroform paralyzes the respiration, and does not affect the heart; at least, to any serious extent; and the other, chiefly held in London, is that chloroform does affect the heart, and may paralyze it, and that this is one source of danger. Before the experiments were performed, the author thought that the possible explanation was, that in London, much more beer was drunk, and, as a consequence, that fatty degeneration of the heart was much more common than in Edinburgh. One of the most valuable researches on anæsthetics, was that made by the Glasgow Committee appointed by the British Medical Association, consisting of Professors McKendrick, and Ramsay, and Dr. Couts. They had found that chloroform sometimes paralyzed the heart, and occasionally in an unforeseen way, so that it could not well be prevented. This, therefore, was a most important point, that required the strictest attention in the experiments.

In most previous experiments that have been made on blood-pressure, the tracing was taken on a revolving drum, which revolved at considerable speed so that all the pulse beats were recorded; but the tracing was so long, that it was impossible to reproduce all of it. To obviate this trouble, the author thought it best to take a tracing of the arterial blood-pressure on a slowly revolving drum, which tracing would probably correspond only with the respirations, and would lose the beats of the heart. In doing this, though, the condition of the heart was unknown; so the author had it so arranged, that at any interesting moment, the tracing could be taken on a drum, revolving two times faster than the first, and thus they had two tracings. By using the twofold method, all the tracings could be reproduced.

The first thing shown, was a tracing of the action of chloroform, when given steadily. The difference, when compared with a tracing of ether, between chloroform and ether, was, that chloroform was the more powerful of the two, and that they were similar in action. They may be compared to a sharp knife and a blunt one in the hands of a surgeon; the sharp one is more powerful for good or evil; it depends entirely upon how it is used. The typical tracing of the action of chloroform shows, that as it is given, the blood-pressure gradually sinks, until you get down to a point where artificial respiration is necessary. In one of the tracings a sudden fall was seen, because a great deal of chloroform was suddenly given, and the effort of artificial respiration was also shown in raising it. If, in place of giving chloroform, ether is given, a much slower fall is produced. A very gradual fall is produced, if plenty of air be given with chloroform or ether, in fact, in giving ether, it was necessary almost to suffocate the animals to get them under. If very little air was given with the chloroform, so that the animal was partially asphyxiated, there was, generally, a sudden fall in the pressure, and the beats became very slow.

The next question to be considered, was how chloroform acted, and whether it was likely to paralyze the heart. There can be no doubt of the fact, that chloroform is a powerful muscular poison, for if it is injected into the artery of a limb, in a short time, almost immediately, the muscles become as hard as a board. So it was thought, that chloroform might act distinctly on the heart, and paralyze the muscular fibres; but when it was injected into the veins, they did not get this distinct action in anything like the degree expected. With the injection of chloroform and ether into the veins, there was a fall of pressure, which much resembled each other, except the action of the chloroform was more marked, and ether always caused clots in the heart to a greater extent. The next thing was to inject it into the trachea, for they thought it would be absorbed very rapidly from the blood-vessels of the lungs, and after the injection of both chloroform and ether, into the trachea, there was a sudden fall and equally as rapid in each. These experiments showed the toxic action of chloroform, and not its therapeutic action, and with many drugs, these two actions differ widely. When given simply by inhalation, they found that the stopping of the respiration prevented the access of enough vapor to the heart to stop it, though, if artificial respiration were used, the heart could be paralyzed. It is evident, that an animal, just on the point of dying from paralysis of the respiration, may, just as the respiration is ceasing, make one or two violent gasps, and thus take in a large quantity of chloroform; probably enough to paralyze the heart. They found some risk in this, but the greatest risk was always from the chloroform vapor *plus* asphyxia. Asphyxia itself will produce the symptoms which have ordinarily been ascribed to chloroform. Several experiments were tried, as to the effect of shock, but they were unable to get any marked symptoms of shock. One objection can be brought against the experimenters—they never tried to produce shock when neither chloroform nor ether had been given. They omitted this, because they thought that cases of shock which we get in men were very rare, and because they thought that they might make a number of experiments, causing the animals great pain, and not come to any very definite results. To avoid giving the animals pain, they tried the effect of pulling teeth, of pulling at the skin of the anus and then snipping it, of opening the abdomen and drawing out the intestine and ligaturing it and, finally, of a blow on the testicles, in producing shock, and they sometimes found a slight fall, but not so marked as one would expect. The effect of position was marked, for when the animal was put upright, with the head up and legs down, there was a distinct fall in the blood pressure which rose again to normal, when the animal was restored to a recumbent position. Elevation of the feet, raised the pressure. The effect of dress which was likely to interfere with respiration, was then tried, and monkeys were used for this purpose, because they more nearly resemble men than dogs do. The female dress was imitated by a plaster-of-Paris jacket, and a tight bandage round the abdomen, and the results of the experiments were marked; two of the animals seeming to die very quickly. In some cases of fatty degeneration of the heart, produced by phosphorous poisoning, the heart seems to stop more quickly after the respiration than in the case of healthy animals, but the effect was not as well marked as one would expect.

The general results obtained were that chloroform and ether both acted in the same way; both paralyze the respiratory centre. If either can be pushed after the respiratory center has been paralyzed, the heart can thus be paralyzed but chloroform is more potent than ether. In hot countries ether cannot be used for it cannot be kept pure, so the ether used in the experiments was not pure and the animals could not be kept under unless they were thoroughly suffocated at the same time. They found that chloroform should be given with plenty of air for the suffocation was very deadly with it. The conclusion arrived at was that deaths from chloroform were due to asphyxia. The most important experiments were those in which there were accidental deaths, which were more common than ordinary surgeons had. The mode in which they occurred could always be traced. The time of day had much to do with it, for the deaths did not occur in the morning when all were sharply looking after things, when there was no hurry, but when not so much care was exercised. Very few deaths occurred on the table and those few were due to carelessness.

ON THE RESULTS OF TREATMENT OF FRACTURE OF THE PATELLA WITHOUT OPERATION. By Wm. T. Bull, M.D. (From the *Medical Record*).

Before the spread of antiseptic surgery there was a general agreement as to the results of fracture of the patella. Bony union was regarded as a great rarity and anchylosis was much feared. With antisepsis bony union was obtained, but the danger of operation is so great that it may be said to be in disfavor. In glancing over the vast literature on the subject one is struck by the fact that, in the opinion of operators, the chief indication for the operation is that, by the old methods, not only bony union but useful limbs were exceptional. As a contribution to the results of non-operative treatment, the author reports twenty-two cases. Since the restoration of the function of the knee is slow, only those which were seen after a period exceeding a year from treatment are useful for our purpose. All these cases were recently examined either by the author or Dr. C. A. Powers at intervals of from one year and nine months to thirteen years after the injury. Sixteen of the twenty-two cases of primary fracture, and the others of "refracture." Nineteen patients are represented as three had had fractures on both sides at different times. Of the sixteen primary fractures, there was an excellent result in fourteeen, a bad result in two. In ten, flexion and extension were complete and strong, the ligament was firm, and there was little or no atrophy of the thigh; in four, flexion and extension were imperfectly performed, but still the joint was useful, but weak after unusual exertion: in two there was no power of extension and a support was necessary for walking. The occupations of these patients were various and sufficiently laborious to test the usefulness of the limb. Three-fourths were between the ages of twenty and forty. As to the union, in one it was bony, in two there was no appreciable separation of fragments, and in ten remaining it varied from one-quarter of an inch to an inch and a quarter, the average, nine-tenths of an inch. This shows that the function may be perfect when the ligament is not more than an inch long; and several cases show that a strong ligament may be formed and undergoes but trifling elongation in the course of years. In one case, after a lapse of thirteen years, the ligament was found to be shortened from two inches to three-fourths of an inch, evidently due to the formation of bone in the ligaments. Six cases (27 per cent.) experienced a subsequent rupture of the ligamentous union, three within two months after leaving the hospital, and two others within a year, and one after ten years. One met with a second refracture after five years. In one instance the bone of the lower fragments gave away while the ligamentous union remained intact. Of these cases of refraction, in two the results were functionally perfect, in the other four there was lack of the power of extension and some support was necessary. Neither the age nor the cause of the fracture seemed to have any influence on the result. In all these cases the treatment consisted of plaster-of-Paris bandages after the effusion had subsided with the application beneath the splint of adhesive plaster strips to steady the fragments. If the patient was seen immediately after the accident the application of cold locally and a posterior splint was used. If seen several hours after injury the author used only compression by means of cotton compresses and snug bandages. The swelling subsided so as to allow the approximation of the fragments in periods varying from two days to two weeks. After the tendency to effusion has ceased, there is no tendency to drawing up of the fragments. The plaster splint is removed after six or eight weeks and a posterior splint applied and the patient allowed to walk. It is best that they should be allowed to walk a little before the plaster cast is removed. For the next month or six weeks the posterior splint should be worn by day and great care should be observed to prevent a stretching of the ligament. Electricity and shampooing and kneading should be used for the atrophy. At the end of three months the patients were generally able to bend the knee only slightly but extension was good. From this point (three or four months after the accident) the treatment was merely the exercise of care to avoid accidents, and the author usually advised the use of a cane to remind them to be careful, and he thinks any further support unadvisable, and likewise passive motion. The daily use of the limb, with friction of the knee at night, and no more forcible measure than the effort to bend the knee with the foot on the floor, an exercise which should be practised daily, are generally sufficient to restore the function of the limb. The treatment after this manner lasts about six months, six weeks of rest and confinement, six weeks with the knee stiffened by a posterior splint, and three months longer when the patient must exercise every care to prevent accidents. The author thinks that this time could not well be shortened and he thinks his number of good results would have been larger if this rule had been strictly followed. If the ligament and joint function begin to weaken, the bones had best be wired. For stiffness alone the author does not interfere, but if there be also impaired extension he breaks up the adhesions and then wires the fragments. The treatment of ruptured ligamentous union should likewise be conservative until it is apparent that the result is to be unsatisfactory. In compound fractures there is no question as to the propriety of wiring the fragments.

As to the impropriety of wiring the fragments in single fracture of the patella, it is only necessary to know that death and disaster from amputation and suppuration and anchylosis have followed its performance and that, in the discussions at the various medical societies, the majority of speakers opposed it. Brunner after 23 years experience at the Zurich clinic says that the previously adopted bloodless methods are appropriate and that the suture by operation of a fresh fracture is very justifiable, when it is compound. As to the other methods—such as aspiration and irrigation of the joint, as suggested by Schede, the subcutaneous suture of silver wire as proposed by Volkmann and modified by Kocher, the peri-patellar suture with silk, and Malgaigue's hooks—there is no evidence that anything has been gained by this cure. They aim to get bony union, but are attended with risk and, moreover, ligamentous union often gives a useful and firm joint.

THE ANALGESIC ACTION OF METHYL-ACETANILIDE OR EXALGINE.

In the *British Medical Journal*, Feb., 15th 1890, p. 344, Dr. Thomas R. Fraser says that there is still need for increase of our therapeutic resources for the relief of pain. In spite of the large number of drugs useful for this purpose, they all have some objectionable feature. In most of the drugs which belong to the aromatic series—such as antipyrine, antifebrin etc,—the analgesic action is, to a great extent subsidiary, being overborne by such other effects as the antipyretic, diaphoritic, and antiseptic. Moreover, when used to relieve pain the dose is often so large that it is not free from danger, and more of them are accompanied by other objections. Slight changes in chemical constitution, often followed by marked changes in the physiological action, an example of which is the combination of methyl with acetanilide, or exalgine, which is found to be more powerfully analgesic than acetanilide and the analgesic dose is too small to produce, any of the inconvenient or dangerous effects of the larger doses. It occurs in colorless, needle-shaped crystals, is nearly insoluble in water, but is freely soluble in rectified spirit, or even in dilute alcohol. Exalgine is an antipyretic only in very large and dangerous doses. The analgesic dose was from one-half to four grains and the largest quantity given was fourteen grains in the 24 hours. No bad effects were noticed. The following is a table of the diseases in which it was given and the results :—

Disease.	Number of Observations.	Number Successful.	Number Unsuccessful or Doubtful.
Facial Neuralgia	8	8	—
Sciatica	10	9	1
Herpetic Neuralgia	10	9	1
Neuralgia of arm in hemiplegia	11	11	—
Locomotor Ataxia, 1st case.	2	2	—
“ “ 2nd “	1	1	—
Toothache 1st case	2	2	—
“ 2nd “	2	2	—
“ 3rd “	2	2	—
“ 4th “	2	—	2
Cardiac Angina	2	2	—
Pleuritic Pains 1st case	1	—	1
“ “ 2nd “	4	4	—
Rheumatic Synovitis	4	4	—
Blaurrhagic Rheumatism	2	1	1
Gastric Pain, Cancer	2	2	—
“ “ Catarrh and Cicatrized Ulva	4	2	2
Cancer in Abdomen	10	6	4
Carcinoma of Liver	2	—	2
Aneurysm of Aorta	4	—	4
Lumbar Abcess	3	—	3

DEATHS FROM CHLOROFORM IN YOUNG CHILDREN.

In the *New York Medical Record*, March 15th, 1890, Dr. Sherman reports the death of a boy, æt. five years, from chloroform. The child had suffered from some hip-joint disease and the hip had been exsected on June 1st, 1889. The patient had improved and in order to hasten recovery, it was decided to scrape a sinus which was left. On July 2nd, the chloroform was given in the usual way on a towel held a short distance from the face. At the bottom of the sinus was found a little carious bone and, as the child began to move, a little more chloroform was put on the towel, and the scoop applied to the bone. The child ceased to breathe. The functions were restored by inversion, artificial respiration and he breathed twenty or thirty times and then stopped again. All efforts to restore him failed. This child had taken chloroform fairly well three times before.

Dr. Gibney also reported the death of a girl, æt. two years, suffering from a sacral spina bifida from chloroform. The chloroform was given in the same way, and the child went under it in five minutes. With a hypodermic syringe six or seven drachms of serum mixed with a little blood were drawn off, and the sac was injected with two drachms of Morton's fluid. Collodion or cotton was placed over the puncture and a roller applied round the body. The operation lasted about ten minutes. The child was not profoundly anæsthetic but cried out occasionally. After the roller was applied, the pulse became feeble, which improved for a short while after the injection of three minims of Magendie's solution. Very soon however the pulse again became feeble, the child died in spite of all efforts at resuscitation. At the autopsy no cause for death could be found.

In the *Lancet*, October 19th, 1889, is recorded the death from chloroform, of a boy, æt. six years, suffering from hip-joint disease. He had taken chloroform twice before. He died after inhaling the chloroform about fifteen minutes. The autopsy showed fatty degeneration of the heart, liver, spleen, and kidneys.

IN THE *British Medical Journal*, February 22, 1890, Noble Smith gives the histories of some cases in which he had done bone-drilling. The first case was a scrofulous boy, æt. 9 years, with acute hip-joint disease. The thigh was flexed and abducted and much swollen throughout its whole length. Thomas' splint gave partial relief from the exquisite pain, but after two months, the swelling and tenderness remained much the same. His condition, already bad, was gradually getting worse. Two openings were made into the bone with a drill one-twelfth of an inch in diameter, one in the trochanter major and the other 2½ inches from the head of the femur. From that time the patient steadily improved in every respect. The second case was a lady, æt. 32 years, with severe pain, aggravated by pressure, in the region of her right hip-joint. A fixation splint only gave partial relief. The trochanter was then drilled in two places and in ten days the patient left for home feeling well and has remained so since. The third case was a lady, æt. 44 years, with arthritis of one of the phalangeal joints and enlargement of the bones. Drilling the distal phalanx ¼ inch from the joint, relieved the pain and lessened the enlargement. He has likewise had good results in drilling the bone for periostitis of the tibia, for sacro-iliac disease, and for two cases of caries of the spine.

LECTURES.

CLINICAL LECTURE ON ANEURYSM. Delivered in University College Hospital, March 11th, 1890. By Christopher Heath, F.R.C.S., Holme Professor of Clinical Surgery in University College, London.

Gentlemen.—We have now in the wards a case of popliteal aneurysm which is especially interesting as occurring in a woman. Aneurysm in a woman is comparatively rare, and certainly popliteal aneurysm is very uncommon, for I do not myself remember to have seen one before. The reason of it in the present case is easily to be found, and you will remember that I called attention to it when the patient was first admitted. She is paralyzed on the right side, and the explanation therefore is that the left leg has had to do more than its share of work, and consequently the artery has become aneurysmal. This woman is forty-seven years of age. There is nothing special in her history bearing upon the disease, and I need not trouble you with the details. She seems to have noticed a lump in the popliteal space for some little time since Christmas, and she came here one day complaining of something the matter with her knee. You will remember that I did not see her with you till Friday week, and we then found that she had a well-marked popliteal aneurysm.

Let me say here one word with regard to the diagnosis. There was a pulsating swelling which was evidently in direct communication with the artery, because the moment we compressed the femoral artery we stopped the pulsation in the sac; then, on very gently pressing the sac while the artery was held, we found we could slightly diminish it and on letting go the main artery again we got the distensile pulsation which is so characteristic of aneurysm. The whole of the pulsations are more or less distensile, for if you put your fingers upon the aneurysm you feel that they are separated one from the other; but the best way of demonstrating it absolutely to a class is to stop the pulsation for a moment, and then allow the tumor to swell out suddenly; then you see at once that it must be an aneurysm. There was in this case an aneurysmal bruit, which means of course that on listening to the sac we hear the sound of the rush of blood. You must not suppose that every aneurysm has a bruit, nor, on the other hand, that every tumor which has a bruit is an aneurysm. You can produce a bruit artificially in a healthy artery by pressure with the edge of the stethoscope, and some cases of vascular tumor have a very distinct arterial bruit in them. Sometimes you get quite a noisy bruit, as in cases of so-called aneurysm of the internal carotid in the head, but in many of these there is no aneurysm. We found that the woman had a large saccular aneurysm. Most popliteal aneurysms are sacculated, for it is very rarely indeed, I believe, that you get a fusiform aneurysm, which is an aneurysm formed by a uniform dilatation of the coats of the artery. With regard to the division into true and false aneurysm, I should hold that every aneurysm which still contains blood within the coats of the artery have given way, and the blood is outside the artery, and a sac is formed by the surrounding tissues, I should call that a false aneurysm. I am aware that that is not strictly the definition always given, but it is sufficient for all practical purposes. And now as to treatment.

I thought that both for the woman and also for you it would be well to try other methods of treatment before resorting to the *ultima ratio* of ligature of the artery. There did not seem any special urgency about the case to require the ligature immediately. Therefore you will remember that we arranged that there should be digital compression of the main artery and we told off the dressers *seriatim* to hold the common femoral artery and cause stagnation of the blood in the sac. What would be the method of cure brought about by that treatment? It is obvious that our object was to stagnate the blood in the aneurysm, and there, if possible, to produce coagulation of the contents of the sac. If we had succeeded—which we did not do,—the clot formed there would have been very much like the clot formed in the basin when you bleed a patient; it is the clot sometimes called a "soft clot" which was held by the older authorities on aneurysm—Broca particularly—not to be capable of producing a true cure of aneurysm. I quite agree that in many cases that clot undergoes changes afterwards which lead to an unfortunate result. I mean that you may get a certain amount of clot, as we did in this patient, by careful compression of the main artery, and a very few hours after the compression is left off the whole of the clot is washed away into the general circulation, and the aneurysm is beating much as before.

Now, the pressure was kept up for four hours on Feb. 22nd, from ten minutes past three until ten minutes past seven, on the very first day on which we saw the patient. At the end of that time the tumor seemed distincly harder and the pulsation less, no movement of the knee being caused by the pulsation. But the next morning when I saw her I thought that there was not any definite improvement; in fact, the little clot that was there had been washed away. I therefore adopted a plan of treatment which is sometimes useful in these cases—namely, flexing the joint forcibly, bending the knee so thoroughly that the aneurysm is slightly compressed against its own artery. In that way we found that we could very nearly stop the pulsation, not completely, and that position was kept up during the whole of the next day. But there was no permanent improvement, and on Feb. 24th instrumental compression was begun at 10.45 A. M., and carried on till 8.45 P. M. A Carte's tourniquet was applied to the groin, and a horseshoe tourniquet below it. The pulsation of the aneurysm was not completely arrested purposely, because we did not want in that case completely to arrest it.

Let us now contrast these methods. The object of the first, compressing by digital means, and stopping pulsation in the aneurysm completely, was if possible to produce coagulation of the contents, and the flexion treatment had exactly the same object. But the instrumental compression which we took up on Feb. 24th had a very different object; we purposely did not stop the circulation completely through the aneurysm, but we allowed a little blood to trickle past by just graduating the compression sufficiently to obstruct but not to stop the artery. Under these circumstances we hoped to get a cure by quite a different method—namely, a deposit of laminated fibrine within the sac, and this method is no doubt that by which nature cures aneurysms. You see occasionally in post-mortem examinations an aortic aneurysm, for example, either absolutely cured, or so far cured that it gives no trouble, by thick deposits of laminated fibrine. If you look in the museum you will see plenty of specimens illustrating this point, and you may see sections of cured aneurysms in the bottles on the table. You will observe dense white fibrine which must have been deposited in layers one upon the other from the outside of the aneurysm towards the centre. That is the method of cure by laminated fibrine, and it is no doubt the best method; indeed, the older surgeons held that it was the only cure, but that is not true. Aneurysms can be cured by coagulating the contents of the sac, but the cure is apt to be evanescent.

I ought to have mentioned that I put the patient first upon a limited diet—namely, meat, six ounces; bread, six ounces; milk, one pint; tea, half a pint; and two or three ounces of rice, to be made up into a pudding with a little milk. She had, you observe, a full allowance of meat, but I limited the bread and cut down the fluids as much as possible. That is the kind of diet that you want to give to aneurysmal patients. You want to increase the plasticity of the blood, and you do that by diminishing the watery part of it, putting the patient upon a limited amount of fluid, and also increasing the fibrinous portion of the food. Then I put her upon iodide of potassium in twenty-grain doses. There is a feeling among physicians rather than among surgeons that iodide of potassium does good in some cases of aneurysm. It certainly could do no harm, and therefore I thought it well to give iodide of potassium at the same time that she was under these various methods of treatment. Nevertheless we failed. Was there any other method which might have been adopted before I tied her artery? There was one, but I did not think it well to adopt it; I think it right, however, that you should know it. It is the application of Esmarch's bandage. In order to do this properly you must put on an elastic bandage from the foot up to the aneurysm, and you must put on another from the thigh downwards to the aneurysm; the result being that you squeeze all the blood of the limb into the aneurysm so that you make it tense, and you make the blood perfectly stagnant in the sac. If you can do that for two or three hours you may hope to produce coagulation of the contents. Some years ago, when the plan was first suggested by Dr. Reid, R. N., I tried it here in two cases, and I have brought the notes of them with me.* The first case was that of a man aged thirty-two, a coal miner, who had a large popliteal aneurysm. On Oct. 29th, 1870, at 3 P. M., half a grain of morphia having been injected beneath the skin of the right thigh, Esmarch's bandage was applied to the limb in the usual manner, reaching to the lower border of the sac. A piece of Martin's india-rubber bandage was applied from above downwards in the thigh, stopping well above the aneurysm, and over the bandage the elastic cord was tightly drawn. At 4 P. M. the patient was placed under the influence of dicloride of ethedene (now we should put the patient under ether), the pain produced by the treatment having become very severe. At 6 P. M. the tourniquet and the anæsthetic discontinued; all pulsation had ceased in the sac, and it was apparently solid. One hour afterwards, however, a slight return of pulsation was noticed by the house-surgeon. Two of Carte's compressors were therefore applied (one to the groin and the other to the middle of the thigh), and the artery controlled by them alternately. Compression was thus kept up until 9 A. M. on the 30th. The result was a complete cure.

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* Clin. Soc. Trans., vol. xiii.

The second case was that of a man aged thirty-seven, who was admitted under my care on Dec. 2nd, 1879. He had a large popliteal aneurysm which was thought to be fusiform. The aneurysm had no thrill in it, and no bruit. On Dec. 3rd, Esmarch's bandage and tourniquet were applied as before, and were kept on for three hours and a half, the patient being under the influence of dichloride of ethedene the greater part of the time. He also made a good recovery.

You may naturally say: "If those two cases recovered, why not adopt the method in the case of this patient?" Well, because there is, no doubt, a little risk of gangrene, and other surgeons have not been so fortunate as I was in those cases. I therefore preferred to tie the femoral artery.

Having made up my mind to tie the artery, I gave the patient (all these methods being a little exhausting) a couple of days' rest, and on Feb. 27th I tied the femoral artery—of course the superficial femoral artery. I tied it where it is crossed by the sartorius muscle, and there was no difficulty in finding it. I made a free incision (and I am sure, if you are to tie arteries successfully, you must have plenty of room) through the skin and fascia, and exposed the sartorius muscle, which was drawn a little outwards. Then the sheath of the vessel was exposed, which I opened carefully with a knife and forceps, and then slipped the needle round, disturbing the parts as little as possible. I feel confident that a successful result depends very much upon the way in which the artery is tied. If you isolate it much, if you pull it about and bruise it with directors and instruments of that kind, you can hardly expect that the artery will do well afterwards. I am sometimes shocked at examinations to see young surgeons, when called upon to operate, taking a steel director and tearing out the artery for an inch or more in length. Luckily it is a dead artery, so that it does not much matter; but if it were living, the chances are that there would be secondary hæmorrhage. I think that is one explanation of the statement lately made by Mr. Ballance at the Royal College of Surgeons that the great mortality after the ligaturing of large arteries was due to secondary hæmorrhage. Now, I have tied a pretty good number in my time, but I am happy to say that I have never seen secondary hæmorrhage. I saw Sir Wm. Fergusson's practice for many years, and he tied a great many arteries, but I never knew a case of secondary hæmorrhage; but I have known it occur in the practice of another surgeon in two cases. One was in the femoral and one in the carotid, and both cases were fatal, as such cases usually are. The artery may be too diseased to bear a ligature. That, of course, is very unfortunate; and if you do get an artery so diseased, perhaps the best course is to use a very large ligature. But if the artery is healthy enough to bear a ligature, it is possible that it may have been too much torn or disturbed at the time of the operation. That is one great argument against a practice which is a very old one, but which has been revived within the last few years by St. Bartholomew surgeons—viz., tying the artery in two places and dividing between. The theory is, that if you have an artery divided in that way, its elasticity is expended by retraction, and there can be no tension upon the point of the ligature. Now, this practice seems to me to add considerable risk to the operation. You must isolate the artery considerably to get two ligatures round it; and, moreover, by cutting the artery through, if one ligature should happen to slip, you lay yourself open to secondary hæmorrhage, and that is what has occurred. A surgeon tied the subclavian artery—you know how short that is—in two places, and divided the vessel between; half an hour afterwards one of the ligatures slipped, the result being that excessive hæmorrhage occurred, and the patient died.

My advice is to tie with a good silk ligature and to tie tightly, and that brings me to another matter which has been lately laid down by Mr. Ballance in his lectures—namely, that we are wrong in tying tightly, and that we should not tie sufficiently tightly to divide the coats of the artery. Let me explain what you do when you tie a ligature tightly. What you do is to divide the internal and middle coats which contract and retract above and below the ligature, by which the external cellular coat it firmly embraced. That I believe is the best plan, because if you use, as we now do, an aseptic ligature, nothing more happens. The ligature in the case upstairs has never come away and never will; it is lying quietly, surrounding the external coat, and strengthening it materially; the middle coat, has retracted and become agglutinated by lymph, and firmly closed; and therefore the risk of secondary hæmorrhage is reduced to a minimum. I quite allow that when we had septic ligatures, when we used to tie with silk or hemp, which came away afterwards (and we left the end of it out to pull at), there was a little more risk. Supposing that firm union had not taken place, and the parts had not become amalgamated, then was the time for secondary hæmorrhage to occur. I have here a specimen which illustrates the subject. Here is the carotid of a young woman who died some years ago. I applied a ligature, and the patient died a few days afterwards from softening of the brain, which is not a very unusual result of ligature of the carotid. The two ends of the aseptic silk are still to be seen in position. The coats of the artery are evidently tied closely, and you can see a considerable clot above the ligature and a smaller clot below. You could not have a better illustration of the use of an aseptic silk ligature.

You may know, perhaps, that it has been proposed to use catgut ligatures instead of silk, and when those ligatures first came in I tied a femoral artery with one of them in this theatre. It was a case of popliteal aneurysm, and I tied the femoral in the ordinary way; but in a few days pulsation returned in the aneurysm and all the way up the femoral artery. It was evident that in the effort made not to tie the artery so tightly as to cut the coats, I had not obliterated the artery at all; and that, the catgut ligature having softened, had given way, and so the current of blood had poured on. I solved the difficulty by putting a silk ligature a little lower down, and the patient got well.* Mr. Thomas Smith, of St. Bartholomew's, was not so lucky. He had a case of that kind, where he tied the femoral artery with catgut, and the same thing took place; the catgut gave way, and the pulsation returned. But, unfortunately, he tied the ligature a little tighter than I did, and the result was that he weakened the coats of the artery at the point of ligature, and within a few weeks an aneurysm developed at that point, so that the patient's condition was aggravated by the operation, because he had a second aneurysm developed at the seat of the ligature in addition to the one below.

So much for the question of ligature and the question of operation in this case. Now let me say a word with regard to what has happened in the sac of the aneurysm since the ligature was tied. Is it a cure by coagulation of the contents of the sac, or is it a cure by deposit of fibrine? It is a little difficult to be sure in this case, because I am happy to say we have not had an opportunity of examining the sac, and I hope we shall not have it, but I rather think it is a cure by coagulation of the contents, and for this reason. We had a certain amount of clot in the sac before the operations. I then tied the femoral artery, and we have never had the slightest pulsation in the sac since. Now in order to get deposit of laminated fibrine you must get a current of blood going through the sac, but we have never had anything of the kind; it has been solid from the first; therefore I think I may say (with a certain amount of hesitation) that we have here a cure by means of the coagulation of the contents of the sac. The effect of the ligature was to do what we tried to do by digital compression, but we failed then to get complete stasis of the contents of the sac, and as a consequence of the ligature we have now coagulation of the contents of the sac and a cure. Now, believing that to be the case, I have been very careful to avoid manipulating the sac since. I think it is quite possible that if we were to over-manipulate the sac and pull it about too much we might displace some of the clot and disturb the cure.

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* Ibid., vol. xi.

With all your care accidents will sometimes happen, whether the cure is from coagulation or from deposit of the fibrine. Sometimes the sac of an aneurysm gives way within a few hours of the ligature of the main artery, and it is a serious matter, because it almost always involves gangrene of the limb and amputation. What is the explanation? I believe it is this, that there is a very thin sac which has possibly undergone a certain amount of manipulation in previous attempts at cure by compression. Then the surgeon resolves to tie the main artery, and when he is doing it some of the bystanders, being very anxious to see that the pulsation has ceased, manipulate the sac. I always take care to avoid that. I only allow one gentleman to put his finger on the sac to assure me that the pulsation has ceased.

Then there is another thing that may happen, and it might happen in this case—inflammation of the parts surrounding the sac might come on. It is said to be inflammation of the sac itself, and possibly it may be; but I think it is rather of the surrounding structures, and is set up probably from the same causes as those I have mentioned—viz., by over-manipulation, and then an abscess forms and has to be opened, and you find that it communicates with the sac of the aneurysm. Now, that is not necessarily a fatal thing at all. If it does not occur for some days after the ligature, the aneurysm has become solid, as you see in these specimens. You open the abscess, and perhaps some of the clot may be discharged, and perhaps not; and although it is an anxious case, still the patient may do well. I have known it occur in a case of carotid aneurysm. A colleague of mine tied the carotid, and subsequently suppuration of the sac of the aneurysm took place, yet there was no secondary hæmorrhage, and the patient got well.

I have been hitherto speaking of the treatment of aneurysm entirely by proximal methods. All the methods I have mentioned have been between the aneurysm and the centre of the circulation, but you must understand that there are methods which we are sometimes obliged to adopt called the distal methods, and I will say a word or two about them so as to put the matter clearly before you. There are of course arteries like the innominate, or the first part of the subclavian, or the carotid low down, where you cannot get to the proximal side of the artery. There have been one or two attempts (you may see Liston's attempt in our museum) to tie the first part of the subclavian artery, and to tie the innominate, but they have always proved fatal, because when the ligatures came away, secondary hæmorrhage occurred. Liston tried to avoid that by tying the carotid as well as the first part of the subclavian in the case in the museum, but the same thing happened, and the patient died. Of course it is possible nowadays, with septic ligatures, that we might succeed in getting a ligature on so near the heart, but it would be a bold surgeon who would do it, because it is a difficult operation, and the results have been so exceedingly unsatisfactory. Therefore for these cases one of the methods suggested for treatment has been what is called the distal ligature, and it is often called Brasdor's operation—not that Brasdor did it. Although it was suggested by a French surgeon, it was an English surgeon, Wardrop, who in 1827, first tied a distal ligature at the root of the neck. He tied the carotid for aneurysm of the innominate, and afterwards the subclavian. You will observe the difference between the two if you think of the anatomy of the parts. The carotid artery runs up from the arch of the aorta, and you have a considerable length of vessel upon which you can put a ligature without any branch intervening between it and the main artery below. But it is very different with regard to the subclavian. From the first part the vertebral, the internal mammary, and the thyroid axis come off, and from the second part there is a superior intercostal given off. Now, imagine that you do as Wardrop did—put a ligature upon the third part of the artery. There are a number of branches intervening between the point of the ligature and the main artery, so that, as I understand it, Brasdor and Wardrop are not exactly the same thing, though we generally call both the distal operation. Then, of course, you can combine the two operations. I myself in 1864 tied these two arteries—the subclavian in the third part, and the carotid artery in the neck—in the case of a woman who had a large aneurysm believed to be of the innominate; but it turned out four years and a half afterwards, when she died, that the diagnosis was incorrect, and that it was really a case of aortic aneurysm. Still, she was immensely relieved, and if she had been careful of her health she might have lived longer, I think. The specimen is in the museum of the College of Surgeons. It is beautifully dissected, and it is injected so that it shows all the anastomoses very nicely.

Of course, these operations must be done upon a different principle from the proximal operations, and surgeons are not quite agreed as to what the effect of tying the distal ligature is. Some say, as Mr. Erichsen holds, that by tying the carotid and the third part of the subclavian you cut off two-thirds of the blood, and leave only one-third to come through the arteries. But the fact that you have tied the artery in these two places, and prevented the blood going beyond, does not prevent the normal quantity coming in below; therefore, it would rather seem, if it were followed out, that by stopping the current of blood beyond the aneurysm you would throw a greater strain upon the aneurysm itself, which, we hope, is not the fact. Then Mr. Holmes has suggested that the clotting extends from the point of the ligatures backwards into the sac of the aneurysm. Now, I have proved that not to be the fact, and specimens in the museums show that it is not so. Therefore, we come to my own theory upon the subject. I only advance it tentatively—that is, that the ligature applied on the distal side of an aneurysm has some effect in altering the direction of the current of blood. I do not know how, but I am sure that if you tie the arteries beyond an aneurysm it is that alteration in the direction of current which leads to clotting in the sac. I allow that it is not a satisfactory explanation, but I think it is more satisfactory than the other two.

It has been suggested that you should inject fluids into the aneurysm, and this has been tried. Perchoride of iron has been injected. Mr. Bech had a case here a few years ago in which he did it, and it produced a certain amount of coagulation but without any permanent effect. Again, it had been suggested that either horsehair or thin wire should be put in the aneurysm, so as to produce coagulation of the contents, and so bring about a cure. The late Mr. Moore of the Middlesex Hospital was the first to do it, and it has been repeated a few times, and with success in the case of the abdominal aorta; but it is a fact that no patient has recovered who has had any foreign body put into a large aneurysm of the root of the neck. With regard to other methods, it has been suggested that injecting ergotine into the neighborhood of an aneurysm might do good; but it is absurd. The idea is that it will cause contraction of the muscular fibre, but if you look at any specimen of aneurysm you will see that there is very little muscular fibre in it, and it could not be affected by the small quantity of ergotine thrown in.

Lastly, there are two suggestions of Sir W. Fergusson's which I ought to mention. One is that in the case of an aneurysm of the subclavian artery in the first part, which cannot possibly be treated by a proximal ligature, you should amputate at the shoulder, and then tie the axillary artery at the end of the stump. In that way you get rid of the limb, and therefore to a certain extent get rid of the danger of secondary hæmorrhage. Mr. Luther Holden and the late Professor Spence of Edinburgh each had a case, and I myself have had a case where I thought it right (the man's arm being perfectly useless and paralyzed) to amputate at the shoulder-joint; but I should not do it again, because I do not think it did any good. The aneurysm progressed as before.

Then there is a question of displacing some of the clot. Sir William Fergusson proposed to manipulate some of the clot out of the aneurysm with a view of blocking the artery beyond. It was done in one or two cases, but without any permanently good result.

SELECTIONS.

REMARKS ON THE DIAGNOSIS AND TREATMENT OF ANEURYSM OF THE AORTA. By R. Douglas Powell, M.D., F. R. C. P., Physician to the Middlesex Hospital.

There is but little that is new to be said about aneurysm, and yet the subject is, in my opinion, one ripe for discussion—one upon which we may profitably collate our views and experience, and which, indeed, requires, especially with regard to treatment, careful reconsideration, in order that the very different methods advocated by different observers may be carefully weighed, sifted, and appropriated to suitable groups of cases. Pathologically, aneurysms are still divided into those in which the whole circumference of the vessel at some portion is dilated—*i.e.* fusiform or globular aneurysms—and those in which the vessel yields at some one point from which there projects a sac, the sacculated aneurysms; but *clinically* the phenomena characteristic of aneurysms are scarcely ever observed, except in association with the sacculated form, the so-called "fusiform aneurysm" being merged, as regards prognosis and treatment, in the class of heart disease with which they are most closely connected. The clinical discrimination of these two forms of aneurysm, then, is quite opposed to their anatomical estimation, and is chiefly important in separating out the true aneurysm, the sacculated, from that which is, clinically speaking, not true aneurysm—the fusiform dilation. For he who would knowingly treat the latter disease seriously as an aneurysm by absolute rest, by starvation diet, by iodide of potassium, or by other more heroic methods, with a view to bringing about coagular depositions, would impair the life prospects of his patient in proportion to the measure of his success. These general dilations, for the most part involve the first portion of the aorta, and are associated with valvular lesions and secondary cardiac dilatations and hypetrophies; they give rise, with rare exceptions, to no pressure signs; they do not tend to cause death by rupture or compression of vital parts, but rather through cardiac failure, angina, and syncope. Their treatment is that appropriate to heart disease. We must consider them, therefore, only as regards diagnosis, from what I venture to call, clinically, true aneurysm—the sacculated form. The essential phenomena of aneurysm are, firstly, those derived from the pressure of a tumor upon surrounding parts; secondly, those indicative of that tumor being a vessel-tumor, a diverticulum from the main artery. If in attempting to make a diagnosis we reverse this logical order of reasoning, and attach primary importance to the evidences of arterial disease and insufficient weight to the presence or absence of those of tumor, there are many clinical snares and pitfalls awaiting us. I might quote many cases in point, but must content myself with one or two, in certainty that they will suggest many others that have occurred in your experience.

A young lady aged twenty, of consumptive history, had, three years and a half before she came under my notice, suffered from early phthisis affecting the apex of the left lung, which, after two winters of suitable treatment, became quiescent. In the autumn of the third year she over-exerted herself, especially in riding and at lawn tennis and during the winter a morbid throbbing of the aorta in the sternal region, with loud murmur, was noticed, which was regarded as aneurysmal, and treated as such by rest in bed, iodide of potassium, ice applications, etc. The patient was subsequently seen by Sir A. Clark who very kindly suggested that I should also see her. Now the physical signs observed by Sir A. Clark and myself were as follows: A tall, thin, delicate, and somewhat anæmic girl, with small chest and poor expansion, the left side moving slightly less than the right. A throbbing sensation to the hand over upper sternum, but no localized pulsation except above the sternal notch, where a slight thrill was perceived; vessels of neck also throbbed. No enlargement of thyroid gland. There was slight dulness and weak breath-sounds in the left clavicular and sub-clavicular regions. Cardiac apex beat and area of dulness normal. At the level of the third cartilage, mid-sternum, a loud, rasping, systolic murmur was audible, perhaps even more loudly heard, but less acute in pitch, at the second left space near the sternum, well conducted upwards in all directions, and audible in the neck vessels. The second cardiac sound well and sharply heard. No localized impulse or jog; no pressure signs or symptoms. On careful examination, the abdominal aorta was felt to pulsate too strongly, and a systolic bruit was audible over it. The absence of all pressure signs in the presence of such vessel phenomena should place aneurysm out of court, and the signs present seemed to us to admit of two interpretations—either (1) being dependent upon the contraction of a healing lung compressing the blood-vessel, or (2) a vasomotor relaxation of vessels identical with that observed in exophthalmic goitre, and sometimes met with dissociated from the more marked features of that disease.

A collection of all the cases that have been mistaken for aneurysm would be very interesting and instructive. It is within the experience of all of us to have seen cases of aortic regurgitation with locomotory impulse of the aorta at the second cartilage and at the episternal notch, where the great vessels diverge from the arch, which might readily be, and often have been, mistaken for aneurysm. I have seen a good number of cases in which the apex of one lung, shrunken and wasted, or excravated by old disease, has receded, leaving uncovered the vessels at the base of the heart on one side, commonly the left. In such cases, breathlessness and ready excitement of the heart's action on slight effort, with local pulsation of the exposed vessel, and often murmur and thrill over it, have led to the diagnosis of aneurysm. These cases sometimes present real difficulties in diagnosis, the whole question turning upon whether there are, or are not, pressure signs present. It is, however, much more common to meet with cases of pulsation, thrill, and murmur over the abdominal aorta half way between the umbilicus and ensiform, the diagnosis of which from aneurysm is often very difficult. I saw three such cases in quick succession in consultation at the beginning of the year, and have seen many before, and some since. One case was that of a lady aged thirty-five, whom I saw with a friend in the north of London. She was of nervous temperament, and six weeks previously had had a severe nervous shock and fright. The doctor had been called in on account of sore-throat and persistent vomiting three days before my visit. On the sixth day the temperature, which had been raised, was down, and the throat better; but the vomiting persisted, and the patient complained of pain over the epigastrium. There was violent pulsation of the abdominal aorta, with well-marked thrill on palpation, half way between ensiform and umbilicus, and a loud systolic bruit here audible, these signs having suggested to my friend the presence of aneurysm. Careful palpation, however, showed pulsation to be strictly along the course of the vessel, extending even to its bifurcation. There was no localized or separate centre of expansile pulsation, no tumor to be felt, and no bruit audible over the spine posteriorly. I may mention as an interesting fact that in this case, as in one of the others seen about the same time, there was distinct mobility of the kidneys—a condition I have observed not infrequently associated with pulsating abdominal aorta. I presume there can be no doubt that vaso-motor disturbance with relaxed tonicity of vessels make up the pathology of this peculiar malady, which is closely allied to the goitrous disturbance of innervation of the thoracic aorta above alluded to, and which may be brought about by hæmic, emotional, malarious, and reflex causes; and one's experience of cases of movable kidney is that their symtomatology is largely made up of disturbed visceral innervation. Under appropriate sedatives for the stomach, chloroform liniment, and menthol applications, and light food supplemented by nutrient enemata, the patient rapidly improved, and under a further course of bromides all pulsation and throbbing disappeared in five weeks, and the patient has, my friend informs me, remained well since.

A much more difficult case of vaso-motor relaxation of the abdominal aorta simulating aneurysm presented itself to me some years ago in the person of a tall, nervous man, who had recently suffered domestic and business troubles, and came complaining of epigastric pain and throbbing and severe attacks of faintness and pain in the abdomen, which would compel him to stop walking and lean against the railings or other object for support. His food gave him pain, and he had frequent vomiting. The epigastrium was at one point exquisitely tender, even on light palpation. There was a marked pulsation and bruit over the vessel, and the tenderness prevented thorough palpation. Although there were no signs of general arterial disease, yet the constant pain increasing, with faintness on exertion, along with the physical signs, suggested aneurysm, and the immediate relief effected by rest, restricted diet, and iodide of potassium encouraged this view. The diagnosis was not satisfactory, however, neither to myself nor to Dr. Murchison, who saw the patient twice with me. At a final meeting, where Sir W. Jenner joined us, we placed the patient under chloroform, when the aorta could be thoroughly explored, and was found to be perfectly normal. The patient ultimately made a gradual recovery.

Now it is to be observed that none of the cases I have just alluded to yield, when examined with sufficient care, evidences of localized tumor or pressure; but it must also be noted that great care is required and considerable difficulty is sometimes experienced in establishing these points; and in doubtful cases, such as that last related, examination under chloroform is quite necessary. On the other hand, all these cases are superabundantly rich in the signs of vascular disease or disorder. I say "superabundantly rich" in these signs, and this leads me to the brief consideration of two of these—viz, bruit and thrill—in regard to their importance in the diagnosis of aneurysm. If you ask an advanced and well-informed student, deficient only in experience, to enumerate the signs of aneurysm, murmur will be one of the first that he will name; yet my experience certainly is that in about half the cases of sacculated aneurysm that come before me for diagnosis there is no murmur to be heard, and in a considerable proportion of cases there is never any murmur audible to the end of the case, and that in a portion of the remainder murmur is by no means the most important sign present. A systolic murmur heard over a limited area remote from the heart, such as the dorsal or supraspinous region, is, however, of much diagnostic value; but mediastinal and abdominal growths, either from intrinsic vascularity or pressure on main vessels, frequently yield systolic murmurs, and a systolic murmur in these situations is *per se* of no positive value in diagnosis. A diastolic murmur is more rare, but when present it has this great diagnostic value—viz., that it is sure evidence of intra arterial disease and therefore in the presence of the signs of a tumor in the chest or abdomen the inference is strong that such tumor is aneurysmal. The only fallacy is the locomotor impulse of the vessel, which especially at the second cartilage, in cases of aortic regurgitant disease or elsewhere may be mistaken for aneurysm. Thrill is a sign of comparative rarity in sacculated aneurysm, whilst it is very frequent in spurious cases, such as some I have already quoted. It, together with loud systolic murmur (and sometimes diastolic also), is generally present in marked cases of fusiform dilatation of the ascending aorta. The situation of the signs near the aortic orifice, and the absence of pressure signs, will generally distinguish this condition from that of sacculated aneurysm or more of these signs, so that we must look beyond them to the age, history, and general build of the patient, and to the superadded signs symptomatic of vessel disease. Unless, however—I repeat for sake of emphasis,—we can establish some evidence of such pressure in any given case, we cannot safely come to a diagnosis of aneurysm. The pressure signs of aneurysm are more inconstant and fluctuating than those of morbid growth; the dysphagia, dyspnœa, etc., are more paroxysmal, manifested it may be only after exertion or effort, or when from other causes the circulation becomes disturbed.

PRESSURE SIGNS OF ANEURYSM.

Pressure on parietes causes local pain, local tumor, (pulsation), absorption of tissues. Pressure on nerves causes radiating neuralgic pains, paralyses, asthmatic dyspnœa, unequal pupils, paralysis of vocal cords, hemiplegia or paraplegia. Pressure on vessels causes inequality of pulses, obstruction of veins, local œdemas, enlarged collateral veins. Pressure on air-tubes causes tracheal signs, paroxysmal dyspnœa, brassy cough, bilateral stridor, bronchial signs, also paroxysmal dyspnœa and cough, unilaterial stridor, filling and consolidation of the lung behind. Pressure on œsophagus causes dysphagia. Pressure on lung causes consolidation, displacement.

In aneurysms which present superficially and anteriorly, the signs are usually well-marked swelling, impulse, and dullness over an area separate from the heart. The degree of pain varies much. I have recently seen a patient with Mr. Propert in whom a large aneurysm could be felt on firm palpation to have already eroded the upper ribs, presenting in the left supra spinous region, and yet this gentleman, a man of active out-door habits, had suffered no pain. Aneuryms which present deeply towards the spine are often very obscure in diagnosis, the symptoms they produce being difficult to recognize from those of neuralgic growth or caries. Evidence of pressure upon the sympathetic, upon the returning veins, upon the trachea or bronchi or nerves of the larynx, would of course absolutely exclude neuralgia, and almost absolutely simple caries of the spinal column. The difficulty of diagnosis from malignant or other growths is often very great or impossible, but the age and build of the patient, his health, history, *and evidence gained by auscultation* will generally lead us right. I have already touched upon the value of murmur and thrill. An impulse quite imperceptible to the hand may readily be perceived by the delicate tympanum through the medium of the rigid stethoscope, and I would here draw attention to the great importance in all obscure cases where aneurysm is in question of using the rigid instrument, for with the flexible stethoscope delicate impulses, imperceptible to the hand, are not appreciable. A murmur may be audible over some spot along the spine or part of the chest distant from the heart, and when thus localized it would carry great weight in diagnosis. But more characteristic than murmur is that peculiar shock or jog synchronous with the second sound, which can as a rule only be detected by the ear, and, again, requires for its recognition the use of the rigid stethoscope. This sound, or rather impulse, perceptible to the ear is made up of an accentuated second sound and a slight jog or shock; when once heard—and it is doubtless familiar to all here—it cannot be mistaken, and it is, I believe, absolutely diagnostic of sacculated aneurysm. It is, however, by no means heard in all cases of sacculated aneurysm, requiring certain conditions for its production. It is certainly not well heard, some deny that it is heard at all, except in aneurysm of the first or second portion of the arch; then the aneurysm must be sacculated; and, thirdly, the aortic valves must be competent, or but very slightly defective. There has been some dispute as to the mechanism of this sign, but there can, I think, be no doubt that it is produced—as pointed out by M. Gendrin—by a momentary want of synchronism between the recoil of the sac and that of the aorta, the maximum expansion of the sac being hardly attained when the aortic valves close with the recoil of the aorta, and the recoil of the aneurysm is thus met and checked by a second aortic wave. When, ten years ago, I contributed an article on aneurysm to Reynold's System of Medicine, I had found this sound in fourteen out of thirty-six cases of thoracic aneurysm; in ten out of the fourteen cases no murmur was present, and in three cases the diagnosis rested solely upon this sign. In some other cases a systolic shock or impulse is also appreciated by the ear, and the double sound thus heard simulates the first and second heart sounds, and has been mistaken for them in aneurysms occupying the position of the displaced heart. I have dwelt at some length upon this sign; firstly, because its value, I think, is scarcely sufficiently recognized, and the sign itself is often missed through the prevalent use of the flexible stethoscope; secondly, because it is often present in obscure cases, in which there is no other auscultation sign to help and perhaps no impulse to be felt, differentiating such cases absolutely from those of solid tumor, which they closely resemble. I cannot now say in what proportion of cases with which I have since met, the sign has been present, but probably about the same, and its value has not abated in my later experience. The sign is by no means incompatible, however, with a systolic murmur, but anything like free regurgitation through the aortic valve, prevents it; but, as I have already pointed out, a diastolic murmur is the one other auscultatory sign which, associated with evidence of tumor in the chest, is diagnostic of aneurysm. I have found this sign of great value in some difficult cases in which aneurysm is associated with contracted lung, the difficulty being to distinguish such cases from contracted lung exposing the heart.

I will briefly refer to a case illustrating this point. A gentleman who, years previously, had had syphilis, suffered from recurrent attacks of laryngeal dyspnœa, brought on by exercise. He was seen by several medical men, and his ailment was regarded for some time as neurotic, then as laryngeal disease, then again as tubercular, and I believe at one time as syphilitic stricture. The chords were healthy, but the left slightly less mobile than the right. The left chest was smaller and moved little; heart's apex displaced upwards and to left; dulness front and back, and great respiratory feebleness over left lung; some distant tubular breathing, not cavernous in quality, under the outer clavicle; a distant jogging impulse, with second shock sound; pulses and pupils equal. This case closely resembled one of contracted fibroid lung, with the heart drawn up, the lung drawn over, and the aorta uncovered; he was expectorating some muco-pus containing no bacilli. The shock sound was characteristic, however, of sacculated aneurysm. The patient was placed on Tufnell's treatment, with iodide of potassium intermittently and nitro-glycerine, to lower arterial tension.

I have, I think, sufficiently indicated that in the diagnosis of aneurysm of the abdominal aorta, the same rule holds good—viz., that we must establish first the pressure of a localized tumor, and this we can do by palpation only, in difficult cases requiring the aid of chloroform; and, secondly, we must establish the fact that the tumor is a vessel tumor, and this also is mainly effected by palpable evidence of pulsation radiating from a centre, auscultatory evidence of murmur being of little use unless the bruit be heard over the spinous region behind, where it becomes of great diagnostic value. Fixed pain in the back, in the aortic region radiating along the nerves, should always attract attention and arouse suspicion of possible aneurysm. Real difficulties mainly arise in diagnosis of excessively rapid growths from aneurysm; shape and direction of extension soon solve the question.

Before concluding the necessarily imperfect introduction, I will allude to the use of the laryngoscope and the sphygmograph in the diagnosis of aneurysm. The value of the laryngoscope is unquestionable, for by it we see whether the innervation of the vocal apparatus is interfered with, or whether a suspiciously altered voice is produced by lesion localized in the larynx. We may sometimes see, as in a case related by Schrötter, a distinct narrowing of the trachea or of one main bronchus by pressure. In perhaps nine cases out of ten, however, that come before us, the use of the laryngoscope is not essential except for completeness of investigation and the satisfaction of the practitioner, and the instrument, even in skilled hands, sometimes gives rise to distressing laryngeal spasms, and therefore must be used cautiously in advanced cases. On the other hand, we know that patients with aneurysm generally take us by surprise. They come complaining of rheumatism, of bronchial cold, which they can trace exactly back to some well-remembered chill. Laryngoscopists especially, not infrequently meet with cases of patients who consult them for throat irritation, and in whom a suspicion of aneurysm is for the first time aroused from finding immobility of one or both cords. This instrument is therefore both of direct and supplementary value in the diagnosis of aneurysm. The sphygmograph is of scientific value in recording more or less accurately the tracing of the pulse which is felt by the finger. It requires much practice to obtain faithful tracings, and, apart from its undoubted usefulness and convenience for reference in this respect, I have never been convinced that it is of any real value in helping diagnosis.

From a treatment point of view aneurysms may be grouped into the fusiform and the sacculated, and into those which occupy the first and second portions of the aorta and those which are more distant.

Further, we have to take into account, in considering the treatment of a given case of aneurysm, whether it presents anteriorly, and is within reach so to speak, or deeply; and lastly, we have to deal with active or congested aneurysms and those which are quiescent. The constitutional state of the patient, especially syphilis and albuminuria, with the general state of the arteries, must not be overlooked. With regard to fusiform aneurysm, the treatment, as I have already remarked, is that of the heart condition, with which it is connected. I shall therefore restrict my remarks to cases of the sacculated variety.

Now the first method of treatment for discussion, the method which merits the first place, as being at once the most rational and scientific, is that which was, at all events, first insisted upon by Mr. Tufnell. It consists, firstly, in keeping the patient absolutely at rest in bed, with all such appliances, and the assistance of sedatives, if necessary, as may render complete quietude tolerable to him for a period of from one to six months; laxatives being administered, if and when necessary, to ensure the action of the bowels without effort, otherwise no medicines. Secondly, in restricting the food and fluids taken to a minimum in bulk, but of nutritous quality: e. g., two ounces of bread and butter and two ounces of milk or tea for breakfast; three ounces of mutton, three ounces of potatoes or bread, and four ounces of claret for dinner; two ounces of bread and butter, and two ounces of tea, with milk, for supper—the total amount being ten ounces of solid and eight ounces of fluid food. Now this is undoubtedly a severe treatment, and only a few determined patients will endure its full severity. Thirst and sleeplessness are the chief troubles; the latter can be relieved by morphia or chloral. The *rationale* of the treatment is clear. 1. Under complete rest the cardiac beats and distension of the aneurysm are reduced by many thousands in each twenty-four hours. 2. The blood-volume is diminished, and is supposed to become more fibrinous and prone to clot. 3. The blood-pressure is reduced, the current through the aneurysm is slowed, and conditions then are favorable to gradual clotting from the periphery.

The observations of the late Dr. Wooldridge tend to show that coagulation of the blood is brought about through the action of a material, lecithin, which, in combination with some fatty acids, is principally connected in the blood with the white corpuscles. It has always seemed to my mind impossible to regard the laminated clotting in an aneurysm as a purely mechanical process, and it would seem highly probable that, in the almost stagnant mass of blood in an aneurysm under these conditions, the white cells tend towards the periphery and layer after layer coagulate the blood in their neighborhood, partly undoubtedly by mechanical properties, but in greater measure by the liberation of this chemical force, and bring about organic fibrinous union with the vessel wall or intermediate layer of coagulum. Some here present may have worked at the histology of aneurysmal clotting and, if so, I trust they will speak on this very important matter. Clinical physicians are certainly aware that under adverse health conditions a laminated clot will rapidly dissolve, and the practical point, and a very nice one, is to determine at what time the diet in these cases can be safely improved. Dr. Wooldridge's observations would lead him to suggest a larger amount of fat in the dietary of these patients, and perhaps the yolk of eggs and cream may be usefully added. The cases for which Tufnell's method are most applicable are:—1. Abdominal aneuryms. Six out of his eight successful aortic cases were of this kind. 2. Cases in which a small sac is pressing deeply upon nerves or tubes. 3. In larger aneurysms in a state of active congestion, and threatening to penetrate the parietes. In some of the latter cases a moderate venesection is of undoubted value at the commencement, but with this remark I will pass by the venesection treatment of aneurysm as inadmissible. Broadly speaking, then, the more distinctly sacculated and the more distant from the aortic valves, the better suited the case for this method of treatment, which is, however, urgently called for in case of congested aneurysm and in cases in which vital parts are being pressed upon. After a few weeks the dietary may be relaxed. In many cases it can never be borne in full severity, and the late Dr. Sibson advised that fluids may be restricted to one pint, and in my own experience this plan has resulted in thoracic cases getting all the good effects one could hope for.

I have recently seen a gentleman, apparently in fair health (I was consulted about his wife), whose case was related by Dr. Martin of Abingdon in the St. Bartholomew's Hospital Reports for 1887. This gentleman had a large aortic aneurysm, causing bulging of the ribs above the right nipple, which was discovered in June, 1881. However, at that time at the age of forty, of active, energetic habits, and accustomed to hunt, having suffered from no symptoms, and being about to be married, the discovery had only been made on his presenting himself for life-assurance. He married, and still occasionally hunted, and was not subjected to serious treatment until 1882, when he was suffering much from pain and palpitation. He was then placed on a water-bed at absolute rest, with a varied dietary, consisting of eighteen ounces solid and eight ounces fluid, daily. He remained in bed until July, and was not allowed to walk until December, the diet still being continued, with but slight variations in quantity. He was then allowed to walk on the level, and gradually to resume a rather small but usual dietary. The pulsation began to be less and its area restricted towards the end of July; the improvement continued through the next two years, and the patient had, since 1886, been active in his business, riding a low cob and driving a low cart, and is the father of several children. This is amongst the few well-recorded cases of recovery from aneurysm, and is very creditable both to doctor and patient. Dr. Wadham, who saw the case in consultation, admits that he has not met with another case so successful, although he has treated several others with a measure of success. I must confess to the same experience, three or four years being the longest period of benefit; but in the above related case the patient was free from syphilis, his heart was sound, and his endurance and patience exceptional. Dr. Wadham is unable to be here, but in his letter to me about the case he well expressed his views, which are valuable for consideration here,—viz: 1. That in his opinion, when resorted to, Tufnell's treatment should be tried alone, without the addition of drug treatment, and especially of iodide of potassium, which increases thirst and adds materially to the fluids taken. 2. That the treatment should be frequently intermitted, never continued for the twelve or thirteen weeks recommended by Tufnell. 3. In his experience the clot seemed to be suddenly deposited, and that then the continuation of the treatment did not seem to increase it. 4. He prefers to begin the treatment in full severity at once, and after four or six weeks, on the occurrence of clotting, to allow the ordinary dietary to be gradually resumed for at least three months. 5. He has never been satisfied that iodide of potassium is of any good except possibly in syphilitic cases. Dr. Vincent Harris relates thirteen cases treated at St. Bartholomew's Hospital by this method, of whom six died; three were cured, all of them ascending aorta with external tumor; one was entirely unrelieved. Dr. Andrew, in an added note, prefers to place the patient on full restrictions of diet at once, to keep him in a quiet, secluded room, and to give no drugs.

With regard to treatment by iodide of potassium, I have little to say, but I hope to hear much. First employed by Nélaton in 1859, its use in the treatment of aneurysm is, I believe, mainly due to the advocacy of Dr. Balfour. I, like others, have prescribed it largely, and in full doses, for aneurysm, choosing for its employment more especially those cases in which the aneurysm is near the heart, and those many chronic cases of aneurysm for which one does not feel disposed to advise a more resolute line of treatment. It is most difficult to judge of the value of this drug, for in all cases in which it is used, a certain measure of quietude is adopted, and most cases have been for the first five or six weeks subjected to more or less complete rest and restricted diet. I believe that I have seen the drug effect good in the first stage of Tufnell's treatment. In syphilitic cases it is of course to be advised.

The conditions requisite to justify *ligature of the carotid artery* are necessarily rare, but the operation has, as is well known, been performed with good results by Mr. Christopher Heath, at the suggestion of our former president, Dr. Cockle, and by Mr. Holmes. For this treatment the conditions seem to be firstly: that the aneurysm is so placed on the first or second portion of the arch that the blood through it is to some degree influenced by that through the carotid on one or other side, especially the left side; this may be at least partially tested by noticing whether any change in pulsation or aneurysmal sound be produced by pressing the carotid vessel. Secondly, medical means having failed, and the aneurysm extending in a direction towards the origin of the vessel, or, as may happen, taking a fresh start in such a direction. I have not as yet met with a case, except one, in which, on other grounds, the operation was deemed inadvisable, in which I have been tempted to suggest ligature, which is nevertheless to my mind a rational and useful treatment in a few instances. The *rationale* of the treatment is that the coagulum occluding the carotid shall extend backwards to the actively dilating sac, and start coagulation there; but in Mr. Heath's case, the vessel, was, I believe, found to be only occluded at the point of ligature.

With regard to the treatment of aneurysm by the introduction of foreign bodies, such as iron, wire, horsehair, etc, I ventured to maintain in my article, ten years ago, that the treatment was wrong in principle: Firstly, because the clot thus formed is in the center of the sac, and is subdivided and soft, instead of being deposited inwards from the circumference, hard and laminated; hence danger of inflammation of the sac, of blood contamination, embolism, etc. I was not aware at the time of the fact, which I have since learned, that the diffuse aortitis which followed Mr. Moore's original operation was probably due to want of antiseptic precaution in its performance. Secondly, by producing sudden coagulation within one portion of the sac, there is danger of its extension in another direction. This danger I have subsequently seen realized. In the two cases I have seen thus operated upon, the temporary relief that followed seemed to me attributable to the considerable depletion of the aneurysm that followed the punctures. M. Charmeil of Lyons has collected the details of fifteen cases of aortic aneurysm treated by Moore's method, and not one resulted in the cure of the aneurysm, but clinically the treatment was nearly always followed by local improvement and relief of subjective symptoms, and "the results ascertained at the necropsies have been encouraging." Mr. Gould has collected sixteen cases, which include two recoveries and two partial successes. In some cases, however, threatened rupture externally appears to have been avoided by this method. I think the same objections hold in galvano-puncture; also the clot thus obtained, being one altered chemically, is a foreign body, and if it do not set up inflammation is apt soon to melt away; still this method has appeared of service in some cases, and, I have thought, in those in which an external sac was presenting through the parietes. It is possible that the alcoholic extract of lecithin prepared by Dr. Wooldridge, and injected into the sac, may prove of more value in these external cases.* Its powerful coagulation properties have been demonstrated by him; its use will require much caution, at all events until its powers are better known. I must leave other and incidental points in treatment. We cannot expect to do more than palliate many of the cases of aneurysm that come before us, and if out of this discussion any improvement should be effected in our treatment of the still remediable cases of a disease that, like aneurysm, tends to disable unto death a considerable number of persons in the prime of their usefulness to their families, and the community, the time will not be ill-spent.

The questions I would especially ask of your experience are: 1. Is fusiform aneurysm to be clinically regarded and seriously treated as aneurysm? 2. What is the relative importance of pressure signs and auscultative phenomena in diagnosis of aneurysm? 3. With regard to the value of shock sound in diagnosis, is it only heard in aortic cases affecting the arch? 4. Should Tufnell's treatment be employed continuously or intermittently for a few weeks at a time? 5. Should iodide of potassium be used in association with Tufnell? 6. Is any further information forthcoming as to the importance of a fatty diet in aneurysm, or as to the value of lecithin and its safety for injection in aneurysm, especially *external* sacs? 7. Fresh experience is required on ligature. 8. Fresh experience on galvano-puncture and wire treatment; cases of sacculated aneurysm, fusiform aneurysm, and spurious aneurysm.

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*Mr. Victor Horsley informs me that Dr. Wooldridge preferred his tissue fibrinogen to lecithin for his experiments, but further observations were prevented by his lamented death. The substance could not be safely employed without further investigation.

TREATMENT OF CHRONIC CYSTITIS IN WOMEN.

The successful treatment of chronic cystitis in women requires an unusual amount of patience, skill and tact on the part of the surgeon.

In the first place, functional bladder trouble has to be eliminated from true cystitis. Pain about the pubic region and pelvis generally, frequent and painful micturition, tenesmus, the sensation that the bladder is never emptied going on day and night for weeks, producing emaciation, exhaustion, and a life of wretchedness, may be due to a variety of causes. It may be purely functional; piles, fissure of the anus, an ulcer of the rectum, or thread-worms in this organ may cause reflex bladder symptoms. Malaria may provoke vesical irritability; sometimes this happens without serious disturbance of the organs of digestion and alterations in the character of the urine. Under such circumstances the only explanation that can be given is the effect of malaria on the nervous system.

We can not help believing true vesical irritability is occasionally a pure neurosis; certainly there are cases which can be explained in no other way. As our knowledge of pathology, however, increases, these cases of neuroses of the bladder, as well as of other organs, will become less frequent; improvement in our knowledge of that pathological change which takes place in the female urethra will surely contribute to this end. Masturbation is another source of vesical disorders; congestion of all the pelvic organs and irritation of the meatus urinarius follow its prolonged practice. Diseases of the uterus, especially of the cervix uteri, and displacements of the womb are common sources of functional vesical disorders. Pelvic abscesses and tumors frequently provoke this trouble. One of the most persistent and painful cases of functional vesical trouble that I have ever seen was in a woman who still menstruated regularly at forty-seven years of age. She had constant but not very severe pain until the monthly period came on, when the pain became very severe, and morphine was freely given to relieve it. I removed, in this case, the left ovary and tube, finding upon the latter a neuromatous growth about as big as a marble. She went home in a month entirely well.

It is pretty safe to conclude, when the urine is normal or nearly so, that the disorder is functional, and not true cystitis; again, as a rule, with of course exceptions, when a woman has to void her urine frequently, and suffers pain in the act, but is relieved when the viscus is empty, or, if she attempt to hold the water too long, spasm of the bladder comes on and the urine is involuntarily ejected in spurts, then the trouble is functional, but when there is great and prolonged tenesmus, with pain and straining after the water has all come away, as a rule there is real disease of the bladder or urethra.

The only way to treat functional bladder trouble is of course to correct, if possible, the cause. A displaced womb must be replaced and retained in its proper position; a diseased womb must be cured, rectal trouble relieved, a foreign body in the bladder removed, etc. It is of the treatment of true cystitis, chronic in character, uncomplicated by other disorders, that I wish to speak.

Generally, in chronic cystitis, the urine is loaded with phosphates and muco-purulent matter; it is also more or less alkaline. Before any operative interference is undertaken the urine should be normally acid; this can generally be accomplished by the free use of citric acid in the shape of lemonade, or lemon juice and water; the mineral acids act more slowly, and benzoic acid is not often well borne by the stomach if administered for too long a period of time. I have seen the use of citric acid in one day remove a thick phosphatic crust on the edges of a vesico-vaginal fistula, or on the wound through the perineum in lateral lithotomy.

The first step in the surgical procedure is to dilate the urethra far enough to temporarily paralyze the sphincter muscle. This should be done while the patient is under the influence of an anæsthetic. I use for dilatation a three-bladed urethral speculum, and after expansion has been continued far enough the speculum is removed and the finger introduced into the bladder. The dilatation should be done slowly, twenty or thirty minutes being required before the process is complete; after this a short piece of drainage-tube is introduced into the bladder, and the urine allowed to drip into a cup between the legs of the patient, if she lies on her back, or close to the hip if she is lying on her side. The latter is preferable, as in that position the tube is more easily retained. The tube should be introduced into the bladder only far enough to drain the organ, and the free end should be just long enough to drip the water into the cup. If too long, it will be pulled out of the bladder by its own weight. The object of the treatment is to give the bladder complete rest. The tube should be kept clean by occasionally washing or changing it. It is a good plan to wash the bladder out through the tube once or twice a day with hot water. I published an account of the treatment of obstinate chronic cystitis by drainage in 1874. Since that time I have repeatedly resorted to it, and with great success. For the last three or four years I have added dilatation of the urethra to the drainage, in the way of making physiological rest of the organ more complete. If the paralysis of the canal and sphincter pass off before the cure is effected, dilatation must be repeated.—*Dr. Hunter McGuire, Can. Med. Rec.*

CLINICAL RECORDS.

On Two Cases of Long-standing Dislocation of Both Shoulders Treated by Operation. By Sir Joseph Lister, Bart., F.R.S., Professor of Clinical Surgery in King's College.

Mr. President and Gentlemen.—I once had the terrible misfortune of causing the death of a patient from rupture of the axillary artery in an attempt to reduce a dislocation of the shoulder. In January, 1873, a man, æt. 58 years, presented himself at the Royal Infirmary of Edinburgh, with the symptoms of an ordinary subcoracoid luxation, which he said had been caused by a fall five weeks and a half previously. I afterwards learned that eight weeks had really elasped since the accident. Having no reason to doubt his word, I proceeded to make free, but not at all violent movements, first with manipulation, and then with the pulleys. Not succeeding in these attempts, I decided to wait a day or two in a hope of a more favorable state from softening of the textures through irritation by the first trial. I had scarcely expressed this determination, when my attention was directed to an enormous swelling, below and behind the axilla, almost as big as a man's head, doubtless due to rapid extravasation of blood. No pulse was to be felt at that wrist, implying that the bleeding proceeded from the main vessel. I cut down at once in the axilla and turned out a mass of clots, and as nothing appeared wrong with the lower part of the vessel except absence of pulsation, I divided both pectoral muscles up to the collar-bone, so as to obtain access to the upper part of the axillary artery. I then discovered an orifice about one-sixth of an inch in diameter in the posterior part of the wall of the vessel in that region. Having tied the vessel above and below this orifice, I took off the head of the bone, so as to enable me to place the humerus in its normal position, and left the patient, though considerably reduced, chiefly by the extravasation that had occurred before I operated, in hopes of a satisfactory result. He rallied for a while, but sank about three hours later. On post-mortem examination, we found that the surface upon which the head of the bone had rested in its new situation simulated cartilage in smoothness and firmness, and was formed of a dense fibrous structure strengthened with a considerable amount of osseous deposit in the form of spicula, proceeding chiefly, though not exclusively, from the coracoid process and the surgical neck of the humerus. A broad and strong fibro-osseous band, thus connecting the humerus with the coracoid process, had lain over the head of the bone, and at the same time was intimately connected throughout by condensed tissue with the sheath of the axillary artery which lay over it. Thus the vessel, instead of being surrounded by loose and yielding structures, as in the natural state, was attached through the medium of the osteo-fibrous band to the coracoid process on the one hand, and the neck of the humerus on the other; and when these were separated from one another by the attempts at reduction, the artery, as well as the band, was necessarily subjected to violent traction. Accordingly the band, strong as it was, was found to have been torn right across, and the rent in it was exactly opposite to the rupture in the artery. An atheromatous condition of the vessel served to explain still further the disaster.* The knowledge of the fact that a condition thus strongly predisposing the axillary artery to injury, when traction was made upon the humerus, might be developed within eight weeks of the occurrence of the luxation, has ever since made me feel a great horror at attempts at reduction of long-standing subcoracoid dislocation. Accordingly, in the cases which I have now to relate, I determined to adopt what I hoped would prove a safer mode of procedure.

Thomas C——, a robust laborer, æt. 47 years, was engaged on April 17th, 1887, in felling trees; and having climbed up one, fell a distance of forty feet on his outstretched arms, producing subcoracoid luxation of both shoulders. The dislocations remained unreduced, and eight weeks after the accident he was sent to King's College Hospital for relief. On admission, both limbs presented the usual characters of subcoracoid dislocation. He was in a very helpless state, unable to dress himself, with the arms almost fixed in a slightly abducted position, and rotation very limited, particularly on the right side. He occasionally experienced numbness and venous congestion in the hands and arms. After considering for a few days what course it would be best to adopt, I proceeded on June 13th, nine weeks and a half after the accident, to operate on the left side in the following manner. Having made an incision from the coracoid process downwards and somewhat outwards in the interval between the deltoid and the pectoralis major, I divided the tendon of the subscapularis muscle at its insertion, and then with a periosteum-detacher proceeded to separate the soft parts from the head of the bone and the inner part of its neck. This having been done, so as to make sure that the vessels were entirely detached from the bone, I applied the pulleys in a manner which I need not describe in detail. As the pulleys dragged on the humerus, some fibrous bands were felt to be put on the stretch, and these were divided. The head of the bone, still refusing to return to its normal position, the bone was more completely cleared, and the pulleys were again applied. This failing, the head of the bone was protruded through the wound as if for its resection, the external rotators being cut through at their insertions; after which the pulleys were again employed, the direction of the traction being altered from time to time by changing the position of the operating table. The pulleys were then suddenly relaxed by pulling on a slip knot arranged for the purpose, and at the same moment rotation outwards and adduction of the limb were performed. The head of the humerus was thus brought nearer to the glenoid cavity; it went still nearer on a second attempt of the same description, and at a third, the head of the bone slipped into its normal place. I need not describe the patient's progress during the first few days, further than to say, that all went on favorably as regards the state of the wound and his general condition. Such being the case, on the following week I proceeded to operate on the other shoulder in a similar manner, except that, guided by our experience on the left side, I here at once protruded the head of the bone, dividing the attachments of all the rotators. In this instance, at the second attempt, the pulleys drew the bone in its proper position. The wound on this side, as on the other, remained without disturbance. On Aug. 3rd, the patient put on his coat and waistcoat unaided for the first time after the accident. The movements were continually improving. There was never any suppuration from within, either on the right side or on the left; but the passive motion which we maintained seemed to keep up a serous oozing from the interior, and it was nearly two months before the wound on the right side was perfectly cicatrized. On Aug. 22nd, the day after healing was complete, the patient was discharged. On Nov. 2nd, two months later, he came to the hospital for inspection. The arms could then be raised to a right angle with only slight movement of the scapula; and rotation was much improved. Some stiffness of the upper arms in the region of the biceps was observed, more marked on the right side than on the left; other movements were normal. Of his present condition, you will be able to judge for yourselves, as he has kindly given us the opportunity of seeing him here this evening. [*The patient was now introduced.*] You see that the shoulders have their natural rounded form. You are aware, of course, that the rounded form of the shoulder depends partly on the head of the bone being in its proper place, and partly on the deltoid having its due development. Here, we have on each side, a massive deltoid over the bone *in situ*. The patient stated that he could do any hard agricultural work, as well as ever. He exhibited all the natural movements of the arms in their normal degree, except elevation of the limb, which he could not do far above the horizontal level. He said, however, that he still found an improvement in that respect going on, so that he could lift, for instance, a key from the top of a clock, for the purpose of winding it up, which he could not do a few months ago.

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* For a full report of this case see the Edin. Med. Journ., March, 1873. No. 3462.

This, gentlemen, was the first case of double dislocation of the shoulder that I happened to have seen, and strangely enough, before this man left the hospital, another example of the same thing made its appearance, due to a very different cause.

Charles D——, æt. 23 years, was admitted into King's College Hospital on July 26th, 1887. Seven months before his admission, the patient, who was an epileptic, dislocated both shoulders in an epileptic fit. He was sent to my colleague, Dr. Ferrier, with a view to the treatment of his epilepsy. Dr. Ferrier, however, found that there was not much that he could do for him, but thought it possible that I might be able to help him with regard to the state of the shoulders. Both humeri were found to have been dislocated in the subcoracoid position. There was considerable movement of the limbs due to the fact that the scapulæ moved with extraordinary freedom along with the humeri. Nevertheless, he was in a pitiable condition. He could not dress himself, he could not put his hands to the gluteal region, and I need not say what a state of miserable dependence that fact implied. The muscles, especially those of rotation, were extremely atrophied. There were remarkable hollows above and below the spines of the scapulæ; so much so, that some medical men who saw him, doubted whether such extreme atrophy of the muscles could be explained by mere disuse. Encouraged by the case you have just seen, I determined to attempt to relieve him by operation. On July 29th, I operated on the left shoulder in the same manner as on the former patient. The soft parts having been completely detached from the upper end of the humerus, the pulleys were applied, when the head of the bone returned into position at the first attempt. As regards the after progress I need not go into details. Passive motion was begun thirteen days after the operation, but we found in this case, that there was a remarkable tendency to the occurrence of adhesions, making movements extremely difficult. We put him twice under chloroform, and moved the limb under the anæsthetic. The wound healed in six weeks without any suppuration, except from the surface of the granulations; but the recovery of power was so extremely slow, that for a while I feared that no good would result from what we had done. In course of time however, under the influence of passive movement and massage, together with galvanism, he improved so much, that, at length, he besought me to operate upon the other side also. He could now dress himself, and he was no longer in the state of miserable dependence to which I before referred. He could also lie upon that side, a thing which he could not do before the operation, and he wished that the other limb should be as favorably circumstanced.

But six months more had elapsed after the first operation, and the result of that procedure, although distinctly successful, had not hitherto been by any means brilliant, and I decided that in this case, instead of detaching the soft parts from the end of the humerus, and attempting reduction, I would merely cut down upon the head of the bone, and remove it piecemeal by chisel and hammer without disturbance of the attachments of the external rotators. For a study of the skeleton with the humerus in the subcoracoid position, had shown me that the removal of the articular portion, without interfering with the tuberosities, would allow the bone to drop back into relation with the glenoid cavity. This was done on Jan. 27th, 1888, and the immediate result entirely answered my expectations. The bone went readily into its place, as I anticipated, and, the wound following the usual aseptic course, the recovery of movement was in the first instance much more rapid than it had been on the other side; and, on March 22nd, he was in a condition to leave the hospital. I afterwards had reason to regret that I had not followed the same course on the right side as on the left. On June 12th, 1888, he came to show himself; both arms were continuing to improve in strength, but the left was now considerably stronger than the right, and its movements more perfect. He could put both hands behind his back; but with the left he could touch the angle of the other scapula, whereas with the right he could only reach as high as the top of the sacrum. He also complained of some pain in the thumb and elbow of the right side, that on which the head of the bone had been removed; while there was no uneasiness whatever on the left side, where the bone had been left intact. I should have been glad if this patient could have presented himself here this evening, but on inquiry I learn that he has gone to America. His brother writes as follows: "In the absence of my brother, I beg to acknowledge the receipt of your letter of the 22nd inst. He sailed for America, in June last, where he is working on a farm, and I am thankful to say is enjoying good health. After he came home he had several fits, neither of which appears to have hurt his shoulders; but for some three months before he went, and since he has been abroad, they have not returned." That is a happy result which I am afraid we can hardly attribute to our surgical procedures. "Before he went he had nearly gained full use of his arms and shoulders, the only difference being, that he could not raise them in a horizontal position above the shoulder. By slightly bending his head and raising his hand from the elbow-joint, he could brush his hair and remove his hat, and he tells us he thinks they still get a little stronger; but from the fact that he is able to earn his living on the farm by *very* hard manual labor, the operation must be considered a grand success."

Now, gentlemen, it seems to me that the results of these two cases is encouraging to us to adopt a similar course in other cases of old subcoracoid dislocation of the shoulder. In the man who has presented himself before you, the attachments of all the rotators to the tuberosities of the humerus were divided, and yet you saw that they had completely re-formed—rotation is perfect, both external and internal. And in the other patient, although the dislocation had been of so much longer standing, the use of the previously wasted rotators has been completely restored. I would advise that, when the surgeon feels in doubt as to whether it is prudent to make attempts at reduction, or when such attempts do not succeed, he should, in the first place cut down upon the bone by the usual incision, from the coracoid process downward and a little outwards, and then with a curved periosteum-detacher freely separate the soft parts from the inner side of the upper end of the humerus. You will then be sure that no damage will be done to the axillary vessels in any manipulations that you may make. In many cases you will doubtless succeed by this means; but if this fails, then these instances show that you may proceed to turn out the head of the bone, detaching the insertions of the rotator muscles; and then in all probability you will be able to effect reduction, and after reduction you will have a thoroughly useful limb. Should even this procedure fail, removal of the head of the bone remains open to us, with promise of a good, though, inferior result.

TWO CASES OF EXCISION OF BURSÆ IN THE NEIGHBORHOOD OF LARGE JOINTS; WITH REMARKS. (St. Thomas's Hospital. Under the care of Mr. H. H. Clutton.)

The question of the operative treatment of bursal enlargements in the neighborhood of large joints is one which has never been devoid of interest to the practical surgeon. Few would recommend treatment by operation until a fair trial had been given to the ordinary measures, which frequently prove successful in such cases, but occasionally the question must be answered in favor of some one method—aspiration, aspiration and injection, incision and drainage, or excision. Most surgeons know of cases in which the simple puncture of bursal swellings has, especially in the popliteal space, been followed by the most serious symptoms, with suppuration in the joint, and perhaps the death of the patient. The injection of iodine has met with more favor in France than in this country, and although inflammation of the joint is said to be less likely to follow its use if the knee be kept extended, this, as Mr. Clutton observes, is apt to follow. As an example of the evils which may follow incision from causes not under control of the operator, Surgeon-Major E. C. Gribbon* published a case in 1885 of much interest. He had under treatment a man, æt. 27 years, with a bursa extending into the popliteal space. This was partly emptied by a small incision. A few days later, swelling appeared in the popliteal space at a higher point. It was aspirated, and afterwards an antiseptic incision made. Four days later the man got up and walked about. This was followed by suppuration in the knee-joint, which repeated aspirations did not subdue, and amputation of the thigh was required to save the life of the patient. With regard to excision, this method (not mentioned in most text-books, though possibly performed more frequently than published accounts would lead us to think) has much to recommend it. When one of these bursæ is incised and drained there is a membrane, exceedingly prone to inflame, extending, it may be, by direct continuity of structure from the drainage-tube to the interior of a large joint, and exposed to any accidental irritation from without, septic or otherwise. And although antiseptic precautions have improved the results of incision, as results were better after the operation for hernia under similar dressing, we may look for still further improvement when the bursa is removed, such as that which has followed excision of a hernial sac under somewhat similar conditions. Mr. Clutton draws attention again to the rarity of the operation of excision of these bursæ, his cases, those of Mr. Silcock, and the one by Mr. Johnson Smith† all going to prove its safety. The development of bursal swellings in the supra-spinous fossa is not common, and, contrary to the opinion expressed in Holmes' System of Surgery,‡ Foucher states that two-thirds of the popliteal bursal swellings which require treatment are enlargements of the gastrocnemio-membranosus bursa.

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* *The Lancet* vol. i., p. 427.

† Ibid. vol. ii., 1878.

‡ Vol. ii., p. 177.

Case I.—Mrs. P——, æt. 37 years, was admitted into St. Thomas's Hospital in September, 1889, with the following history. About eight years ago she "over-reached" her right arm, and felt pain in the shoulder, which had never entirely ceased. Five years ago she first presented herself to Mr. Clutton in the out-patient room with a small fluctuating swelling in the supra-spinous fossa of the right scapulæ. It was then tapped, and straw-colored fluid drawn off. From that time until the date of her admission into the hospital, she came irregularly to the out-patient room, and always with the same complaint—namely, pain down the right arm, which prevented her from using it as freely as she would wish. The cyst was tapped on many occasions and always contained the same kind of straw-colored fluid. The tapping gave her temporary relief. The shoulder-joint was freely movable, but she herself could only with difficulty put the joint through its ordinary range of movement. At first it was thought to be a case of early osteo-arthritis with a synovial diverticulum along the supra-spinatous tendon, for the joint seemed somewhat larger than its fellow; it was also slightly tender, and there was a faint suspicion of crepitation. But when she again presented herself for treatment, after an interval of about two years (and five years from her first visit), and it was seen that the evidence of any joint disease was quite as doubtful as on the first occasion, it was determined that some radical treatment might justly be attempted. It was then a large fluctuating swelling behind the right clavicle. Believing that the removal of the whole cyst, or as much of it as was possible, was better than an injection of iodine, Mr. Clutton on Sept. 21st, (the patient having been admitted) made an incision four or five inches in length behind and parallel to the right clavicle. The cyst was opened so as to obtain more room for dissection, and found to contain solid flakey masses in a watery fluid. The walls were exceedingly thick and intimately adherent to the tendon of the supra-spinatus muscle towards the acromion process. They were, however easily dissected off the muscle and tendon as far as the acromion process, but at this spot the dissection could not be carried further without sacrificing the integrity of the acromion process or clavicle. A probe was passed along the cavity to see how far it extended and whether it communicated with the joint. The pedicle was then severed with a pair of scissors at the farthest point that could be reached, leaving about half an inch of the cyst beneath the acromion. The probe did not demonstrate any opening into the joint. The wound healed by first intention, and she had no rise of temperature. She left the hospital on Oct. 6th, and attended in the out-patient room on Oct. 15th, when the following note was made: "Wound quite sound, free movement in shoulder, no pain now at all down the arm." She has been seen several times since, and says that she can now use the arm without any pain or discomfort. The movements also in the shoulder appear to be as free as on the opposite side.

Case 2.—A boy, æt. 12 years, was admitted into St. Thomas's Hospital in September, 1889, with a large popliteal bursa. He had been treated in the out-patient room for a month by splint and blistering, but without any improvement. He had noticed the swelling at the back of the left knee for three or four months. The bursa was considerably larger than is usually seen at this age, and was situated on the outer side of the popliteal space. On September 19th it was excised. It was intimately adherent to the outer head of the gastrocnemius from which it was with difficulty dissected without opening. No other muscle was in close contact with it. It was a very irregular and sacculated bursa, but as it had been removed entire it could not have communicated with the joint. The wound healed by first intention, and there was no rise of temperature. He was seen in the out-patient room on October 15th, when the following note was taken: "No limitation of movement in the knee, no pain or discomfort of any kind." He has not made his appearance since then, but it is fair to assume that he finds no difference between the two knees.

Remarks by MR. CLUTTON.—I did not know of Mr. Silcock's cases recorded in the Clinical Society's Transactions, vol. xxii, p. 163, till the volume was issued last autumn (October or November), but his paper was read on February 22, 1889. He there states that he had been told that his treatment of excising popliteal bursæ was "heroic," and, moreover, says that he had been unable to find more than one other recorded case. In support of his contention I have thought it right to publish these two cases as a small contribution to the subject. The first case was of considerable interest from the doubt that was at first naturally felt as to the real cause of the enlarged bursa. If it had been a case of osteo-arthritis, little good could have been anticipated from the removal of a synovial diverticulum; but the lapse of time, coupled with the absence of any positive signs of progressive disease in the joint, effectually dispelled these fears In the second case I was led to excise the whole bursa instead of leaving a portion, as Mr. Silcock did, from the fact that I expected, on approaching the posterior ligament of the knee joint to find a prolongation through this ligament round which I might throw a ligature; but, finding that this was not the case, and that I had practically isolated the entire growth, it was as easy to remove the whole as to leave a portion. On further consideration, it would seem to me the easier and the better practice to leave a portion whether it communicates with the joint or not. It would shorten in most cases the amount of dissection, and leave the patient more nearly in his natural condition. It is scarcely necessary at the present day, when surgical wounds do so well, to argue against other forms of radical treatment of these bursæ close to large joints. The injection of iodine, for example, is more likely, in my opinion, to produce a synovitis of the knee than an aseptic wound with a partial or complete removal of the bursa.

PROCEEDINGS OF SOCIETIES.

ALLEGHENY COUNTY MEDICAL SOCIETY.

Special Meeting, February 19, 1890.

W. S. Foster, M.D., President, in the Chair.

TRACHEOTOMY FOR FOREIGN BODY.

Dr. Murdoch: A little boy was brought to the West Pennsylvania Hospital recently, who five days before was lying on his back with a grain of corn in his mouth; he took a violent paroxysm of laughter, suddenly gave a very long inspiration, and immediately was seized with a paroxysm of coughing and strangling. The parents, who knew that the boy had the corn in his mouth, surmised it had gone "the wrong way," and into his windpipe, and commenced—as is customary with people in such cases—to slap him on his back; and not succeeding in relieving his paroxysms of coughing, they sought assistance from their family physician, who came and gave the child an emetic. The child vomited profusely, but was not relieved. He continued to cough, had violent paroxysms that night and all the following day, and then still further relief was sought, and every effort was made to dislodge this grain of corn from the windpipe. The child was inverted, shaken, and slapped violently on the back; still other emetics were given, but no relief came, and the father brought the little fellow to the hospital. He then presented every appearance of a child suffering from œdema of the lungs. The skin of the face was livid. The child was evidently in great distress, breathing with considerable difficulty, and every few moments he would be taken with violent paroxysms of coughing. On examination of his chest I was unable to detect any abnormality in either lung by auscultation or percussion. But from the history of the case, and from the other symptoms, I thought we were warranted in opening the windpipe. Before putting the child under an anæsthetic, I inverted him and shook him, but the corn was not dislodged from its position. He was then anæsthetized with chloroform, and that procedure was repeated without good effect. An incision was then made into the trachea; the second, third, and fourth rings of the trachea were divided, and when the forceps were introduced into the trachea, the child gave a violent inspiration and then a violent expiration, and at once the corn came up from below and appeared at the opening. I made an effort to grasp it with the forceps, but failed, and it went back into the trachea. Then, by introducing a pair of narrow-bladed forceps to try to get the corn, the irritation of the forceps seemed to excite another paroxysm of coughing; the boy made another inspiration and after it an expiration, and the corn was thrown away across the room, lodging some eight or ten feet from the boy. It was picked up, and found to be a very large grain. It must have been three-fourths of an inch in length, by half an inch wide, and a fourth of an inch thick; and it was in a swollen condition, and, evidently, had it remained much longer in the boy, it would have commenced to germinate. The case demonstrates the value of the operation of tracheotomy. I believe that if this body had been larger and more spherical, it would have probably lodged in the larynx. That is the usual way children choke. If it is a spherical body, or a body like a piece of meat, it will be impacted in the larynx, and unless the child is relieved at once, he necessarily perishes. When the body is angular, as a grain of corn, if lodged in the larynx, sufficient air can pass to sustain life. In all cases we are not so successful as I was in this one. Frequently, when the windpipe is opened, the surgeon is unable to get the foreign body. It may be impacted in one of the bronchial tubes, and even if it does not escape at the time of the operation, the chances of it escaping from an opening in the trachea are much greater than they would be for it to escape through the larynx.

DEAFNESS WITHOUT APPARENT LESION.

Dr. Allen: A man in a mill was assisting a man much larger than himself at a roll; a link of a chain swung around and struck the larger man, breaking his nose and crushing his face, but simply pushing the smaller man to one side. This man showed no symptoms of prostration, and presented all the appearances of being uninjured, with the one exception that, as he was taken up, he was absolutely deaf to all noises. Going over all the points, I failed to elicit one point further than the fact that he could not hear. He had no aphasia, there was no paralysis of any of the muscles of the body, of the eyes, or face. There was no paralysis of taste. The ear-drums were intact, the membrane being perfectly translucent and of the proper color, and no hæmorrhage known in the case at any time. It possesses the simple fact of there being absolute deafness in both ears, caused by being merely knocked over, and falling on the side of the head. I do not know what progress the case will make; it is of recent origin.

TREATMENT OF COMPOUND FRACTURES INVOLVING JOINTS.

Dr. McCann: I would like to talk about the treatment of compound fractures involving the joints, such as are attended by more or less destruction, not only of the bony tissues, but also of the soft parts in the vicinity of the injury. Such injuries result commonly, as they have fallen under my observation, from two causes: first, accidents which happen to brakemen in coupling cars in which the elbow is caught between the "drawheads" or "deadwoods" of a pair of cars. In putting in the link to make the coupling, or in attempting to drop the pin, the elbow is caught directly between either the drawheads or the deadwoods. The result of this is an extensive fracture, involving the elbow joint, with extensive laceration and bruising of the soft tissues.

The second form of accident is that which involves the ankle joint, and in which the foot is caught either beneath the wheel, or pinched by the brakeblock. In one case, still under my care, the man fell between the trucks, his foot falling so that not the crown of the wheel, but the flange, passed across the outer and dorsal surface of the foot, opening the ankle joint, but not cutting through the tendo Achillis, though tearing the skin as far as the inner edge of that tendon. In another case, the accident involved the limb a little higher up, also opening the joint and crushing the astragalus. In the past, efforts to save such limbs usually resulted in a secondary amputation, or in the death of the patient. The method of treatment is certainly a very important element in the history of these cases. Under the old regime, the treatment usually adopted consisted in a sort of perfunctory cleansing of the wound, the application of carbolized oil or carbolic solution ; the limb was placed in the position deemed most favorable in the eyes of the surgeon, and the reparative powers of nature were trusted to either cure the foot, or to demonstrate the utter impossibility of saving it, if the patient did not die in the effort to find out whether or not his foot should be cut off. Within the past few years this has been modified, and the practice now (and I presume it is so all over the world) is to be guided by the extent of the injury. If the blood-vessels and nerves are not involved, even if the bones be extensively crushed, an effort should be made to save the part ; and this effort is comparatively simple, or rather the principles upon which it should be carried out are simple. First, cleanse the wound thoroughly, remove everything, fragments of bone, of devitalized skin, of wood or iron, everything foreign or liable to be septic. Then the limb should be thoroughly dressed antiseptically after being carefully washed in some solution, and the one I resort to is bichloride of mercury 1 to 1000 or 1 to 2000 ; the limb is then carefully put up in an antiseptic dressing, carefully but loosely applied so as not to constrict, but to protect the wound. If there is any tendency for the tissues to fall into such a shape that there will be pockets, I have no hesitancy in making counter openings and introducing whatever number of drainage-tubes may be necessary to secure proper drainage for the wound secretions. Now, having done this, the limb is placed on a splint, care being taken that there is no constriction of any part, that there is no tight bandage, no application which can in any way interfere with the arterial circulation, or obstruct the return or venous circulation. The limb is elevated so as to favor the return circulation, and then dry heat is applied externally to all the dressings. The first dressings should be of sublimated or iodoformed gauze ; borated or carbolated cotton is also applied to simply protect the wound by placing around it a sufficient amount of absorbent material, to exert a very moderate degree of elactic compression, and to prevent constriction. Now, under this treatment, you will either discover at the end of twenty-four hours that your limb is saved or is absolutely lost, and, in the meantime, you have protected your patient in the event of gangrene attacking the limb as a result of the traumatism. You have protected your patient against sepsis; and even if gangrene does occur, it does not spread with the rapidity it invariably assumes when the wound becomes septic. You have nothing to fear from the occurrence of that acute, spreading gangrene—the "gangrene of inflammatory sepsis"—which has been the curse of surgery in the past. Usually at the end of twenty-four hours the first dressing should be changed, and it has been my habit to again cleanse the wound thoroughly, to pass a stream of some antiseptic fluid—usually the 1-2000 bichloride solution —through the drainage-tubes. Usually you will find one or two of them filled with coagulated blood. This should be removed, and if the opening is large enough, it need not be replaced. The second dressing should be applied just as the first. After this second dressing, it is usually unnecessary to replace the dressing for seventy-two hours, or longer. A finger or toe should always be left uncovered, by which you can ascertain the condition of the extremities. If the toes or fingers continue warm when you expose them, and the capillary circulation perfect, you have nothing to fear. Now, under this treatment, if infection does not occur, the wound surfaces are not irritated by septic material. Suppuration does not occur. The discharges which flow from the wound are trifling in amount. The wound itself is comparatively painless. If there be dead portions (and usually there are), dead fragments of bone, dead shreds of skin or of bruised muscle remaining in the wound, of course they are foreign bodies; but the process of separation between the dead portion and the living goes on kindly, and without suppuration. Without going further into the details of treatment, I may state that this plan should be carried on until the whole surface of the wound is cicatrized. The dressing does not require changing more than once in four or five days. Now, to close this matter, I may state that of all the cases I have treated, five have involved the ankle joint, two of them were complicated by fractures of leg bones, one of them with the splitting of the tibia for eight inches. In all, the joint was widely laid open, extensive damage had been inflicted upon the bones, with great laceration and contusion of the foot and of the tissues around the ankle. In another instance, one in which the foot was caught under the flange of the wheel, by the patient falling between the trucks, the flange traveled up along the outer surface of the foot, opening the ankle joint, crushing through the bones of the foot, so that when the stitches—which were injudiciously applied —were cut, the crushed portion of the foot dropped apart.

Now, under the method of treatment which I have advocated, thorough antiseptic cleansing, thorough draining, the use of loosely but thoroughly applied antiseptic dressings, this foot has been saved, and the man will soon be able to walk upon it.

Dr. Buchanan: I think the Society is under an obligation to Dr. McCann for the pratical and excellent manner in which he has laid down the rules for the treatment of these injuries. I believe the general principles he has enunciated are the accepted ideas on the subject, and they are very well established to-day; and for that reason I think we are disposed to take for granted that because Dr. McCann and certain other men, who see a very great amount of railroad and other surgery, do adopt these rules of conduct, their adoption is universal. I think this is a mistake, and I think we can very profitably stop and repeat these rules as Dr. McCann has done for us this evening. The most unexpected results, I think, can frequently be achieved by careful, systematic and methodical repair of injuries. I exhibited to this Society, some time ago, a case of complete excision of the ankle with excellent motion, in which there had been extensive laceration and crushing of the joint. Since that time I have attended another case in which the ankle, and indeed the whole posterior and middle part of the foot, were so crushed that I hardly felt justified in asking the man to allow me to attempt to save it, but the man was urgent in his desire and would not permit the subject of amputation to be discussed; he knew the foot could be saved, and he gave me no option in the matter, and somewhat against my judgment I excised the ankle-joint, put the foot together, and the result is that to-day the man walks very well with a cane, and will soon dispense with it. The astragalus, a portion of the os calcis, the lower extremities of the leg bones, and some pieces of the other tarsal bones, were lost. The lower end of the tibia was wired to the lower part of the os calcis, and the soft parts of the foot were stitched together and dressed, as Dr. McCann has so well described. The patient recovered without a bad symptom. The wire was removed some weeks afterward. I have also treated a case lately with Dr. Huselton and my father, in which there was a laceration of the tissues about the ankle joint, fractures of both malleoli, and complete disarticulation and projection of the leg bones, which plowed into the earth. This patient had his joint cleansed and articulated; the inner malleolus was fixed into place with a buried wire, and there was no reaction whatever; afterward the man made an uninterrupted recovery.

TRAUMATIC SECTION OF BOTH TENDONS ACHILLIS.

I have recently treated a case of injury to one ankle joint, and to the leg on the opposite side, by a mowing machine. The man, who subsequently became the patient, stepped in front of the cutting bar of a mowing machine and struck the horses; the animals responded immediately; the cutting bar of the machine cut off the tendo Achillis, passed directly through the ankle, cutting off both malleoli, both posterior arteries, and the tendon of the posterior tibial muscle. On the other side the section was higher up; it passed through the tendon of Achillis and cut a piece off the tibia. Both the tendons Achillis were sewed with cat-gut, four stitches; the other stitches were put in place, and the usual anti-septic dressings applied without drainage. The man's wounds healed without any reaction or discharge whatever, and he walks well to-day without support. The union of the tendons was perfect. I thing it is well to emphasize the fact that so long as there is circulation in a limb, an effort should be made to save it, and I think, also, that such an effort will usually be successful. In one particular, only, I would make some difference in the treatment from that laid down by Dr. McCann. I think that as time goes on I see less use for drainage tubes. When I first commenced to employ this treatment, I used a drain wherever I had a chance. There might have been some fluid, and there probably was some fluid blood running during the first 24 hours, but afterward it was coagulated; after the primary dressing of the wound, I never washed it out, and in three or four days removed the tube with the clot in it, and have never seen any reason to change that practice; but I can believe that drainage tubes are more used than is necessary, and that if we succeed with our antisepsis and apply proper pressure, we need not be afraid of any accumulation of fluid in a wound. I have also seen that if, in a soft cavity there has been a serous accumulation because proper pressure has not been applied, such accumulation gives rise to no serious inconvenience, and when evacuated the walls of the cavity collapse and unite without further discharge. I would therefore think that, instead of endeavoring to put in all the drainage tubes possible, I would limit them as a matter of convenience. The tube does no harm if properly used, but I think it is, as usually applied, unnecessary.

Dr. Huselton: In the main I agree with Dr. McCann. I want to say that the amount of damage done to the skin in the case of a crush wound is no criterion of the amount of damage done to the interior parts, bones, muscles, nerves and vessels, and in accordance with my experience I think that where a hand, a wrist joint, an arm or an elbow joint, is caught between the bumpers of a car, the couplers, or the deadwoods, sufficiently to produce a fracture, even if not compound, the best thing to do is to take that limb off; if you do not you will regret it and have to do it afterward. I have had considerable experience with injured ankle joints in railroad accidents. One of them was produced by the flange of a wheel; the joint was open so that I could put my fingers in. This I dressed antiseptically, cleansing it of all foreign material, washed it out, put it up antiseptically with a splint, without a drainage-tube. I do not use drainage-tubes very often, and I think I shall use them less often hereafter. This man got well and left my care before he had perfect locomotion in the joint; it had entirely healed, there was considerable motion; he was making a pretty good stagger at walking. In another case, in which the right limb was crushed from the knee to the ankle joint, the left ankle was open so you could see into it also. In this case I amputated the right leg. I treated the ankle joint as in the previous case described, and the man to-day has a perfect ankle joint and a good wooden leg, and is walking around as well as any of us. I do not change the dressing so frequently as does Dr. McCann; sometimes I do not remove the dressing for a week. I am governed entirely by the condition of the part and by the patient's condition as to temperature and pulse. If there are symptoms indicating the necessity of removing the dressing, I remove it, otherwise I leave it alone.

Dr. Rigg: I would like to say a word in reference to the class of wounds spoken of by the gentlemen who have preceded me. In 1882, I treated my first compound fracture of the elbow. It was caused by an accident to a young man at work in a coal mine; he fell in front of a wagon, his foot caught in a frog, throwing the wagon off the track, the wagon running over his arm and elbow joint about the middle third. The superficial veins were lacerated, the arteries intact. The bleeding was controlled with little trouble. Since it was my first case of the kind, I took two physicians with me when I went to see the case a second time. They insisted on amputation. I removed at that time, I think, a half-dozen small pieces of bone; the young man insisted on leaving the arm as it was, believing there was a fairly good arm left. My plan was to treat it antiseptically, strictly so, and I placed it on an incline, put no tight dressings to it at all, and had my dressings laid in such a way that I could, at my own pleasure, remove a portion of them to see what was going on beneath. I might say that the shortening, as nearly as I could make it out, was three and one-half inches. I continued on this plan of treatment, and, I may say, without drainage-tubes, until the arm was well and there was fair motion. There was never perfect motion. The humerus was very much thickened by reason of the fragments of bone not being adjusted closely. As to drainage-tubes, I have used few. The last two cases of amputation I had, no drainage-tubes were employed; they were amputations of the breast, and I believe them to be fairly good cases to test the value of a drainage-tube, there being much surface made bare; and in both cases there was primary union throughout—something I have never seen where a drainage-tube was used—and I feel that if the antiseptic treatment is followed out strictly, a drainage-tube, in the majority of cases, is of little or no value, and oftentimes of a little disadvantage.

Dr. McCann: I want to say a word in regard to two or three of the criticisms. In the first place, I do not think that because a limb, elbow, or wrist has been caught between a deadwood or drawhead, it necessarily requires amputation. I can show any one who is curious enough to come to the West Penn. Hospital, instances where not only the bones were crushed, but the soft parts also, that were saved.

As to drainage-tubes. I do not like to introduce a foreign substance into a wound—would rather get along without it if I could; but for a crush involving the tissue of the joint or the muscles, there must necessarily be a large amount of fluid secretions.

Now I do not care if they are pent up underneath the skin without any access to air; they are likely to generate poisonous and irritating leucomaines, which cause local irritation and constitutional infection. We all know that before the days of antisepsis the tight closure of wounds was far less favorable in its results than the open method. Who can be sure, when he closes his wound, that he has rendered it aseptic? And if he has accomplished this, there may be floating in his patient's blood germs capable of infecting the wound.

Dr. Buchanan: There are two points on which I wish to speak. The first is the possibility of saving a limb that has been fairly and squarely caught between the bumpers, with fracture of the bones. I believe it can often be done, and I will cite a single instance. About six or eight months ago, I was called with my father, to see a little girl whose arm had been caught between the bumpers of two freight cars; the arm was crushed, wholly crushed from the wrist to the elbow. The vessels were not injured, but there were multiple fractures of both bones, and considerable pieces of bone had to be taken out. I think it safe to say that half the muscular tissue was crushed off. The skin was extensively lacerated The arm was shapeless. I do not think any injury could deserve the name of crush better than this one. It was so evidently a serious injury that her parents and friends, and all persons who saw it, thought the arm must be amputated. This arm was not amputated; it was thoroughly cleansed and put together, dressed with a straight splint; on no other kind of splint could the arm be kept in the semblance of an arm. It united without any suppuration—as is usual in such cases when antiseptically dresssed—and while the child has not a beautiful arm, nor a very straight arm, she has a hand and a wrist and an elbow joint that are almost as useful as before. Now, as to drainage-tubes: I think it is hardly fair to bring up the surgery of ancient times to prove that drainage-tubes are good things. We will all admit that the essential object of a primary drain is to eliminate fluids which might become the breeding-place for micro-organisms. And I am further satisfied that if we can exclude local infection of the wound, we need have no fear of its infection through the general circulation.

Dr. Green: As I understand Dr. McCann in regard to drainage-tubes, in applying an antiseptic dressing, it is true, of course, that nobody can be positive that he leaves the wound without any danger of sepsis; I care not how carefully a wound may be washed, it is simply impossible to remove all the putrescible matter—a portion of it is bound to remain in the wound. It seems, therefore, the part of wisdom to provide means for its discharge.

110 West 34th Street.
NEW YORK, *April*, 7, 1890.

Mr. Editor :

In a letter dated Berlin, Karlstrasse, 19, March 22d, Dr. Lassar, the Secretary-General of the Tenth International Congress, directs me to inform the Medical Profession of America, that a programme of the Congress and other communications will be distributed two months before the meeting amongst *those who will have registered previously and received their Ticket of Membership.*

The latter can be obtained by sending application and five dollars to Dr. Bartels, Leipzigerstrasse, 75, Berlin, S. W. By so doing the members will save much crowding and time during the first days of the Congress.

For the American Committee of the Tenth International Medical Congress,

A. JACOBI, M. D.

TENTH INTERNATIONAL MEDICAL CONGRESS.

To be Held in Berlin, August 4th to 9th.

The Committee of Organization of the Tenth International Congress, R. Virchow, President; E. von Bergmann, E. Leyden, W. Waldeyer, Vice-Presidents; O. Lassar, Secretary-General, have appointed the undersigned members of an American Committee for the purpose of enlisting the sympathy and co-operation of the American profession.

We are assured that the medical men of our country will receive a hearty welcome in Berlin. The Congress promises to prove of inestimable value in its educational results, and in securing the ties of international professional brotherhood. It is most important that the American profession should participate both in its labors and its fruits.

Delegates of American Medical Societies and Institutions, and individual members of the profession, will be admitted on equal terms. The undersigned, therefore, beg to express their hope that a large number of the distinguished men of our country will appreciate both the honor conferred by this cordial invitation and the opportunity afforded us to fitly represent American medicine.

The Congress will be held at Berlin, from the fourth to the ninth of August.

The arrangement in regard to a few general meetings and the main scientific work, which is delegated to the sections, are the same as in former sessions. A medico-scientific exhibition, the programme of which has been published a few weeks ago, is to form an ingredient part. It is to the latter that the Berlin Committee is very anxious that both the scientific and the secular press should be requested to give the greatest possible publicity.

The office of the Secretary General is Karlstrasse 19, N. W., Berlin, Germany.

S. C. Busey, Washington, D.C.
Wm. H. Draper, New York,
R. H. Fitz, Boston, Mass.
H. Hun, Albany, N. Y.
A. Jacobi, New York.
Wm. T. Lusk, New York,
Wm. Osler, Boston, Mass.
Wm. Pepper, Philadelphia, Pa.
J. Peyre Porcher. Charleston, S. C.
J. Stewart, Montreal, Can.

Office of the
Surgeon General of the United Confederate Veterans.
156 Washington Avenue.
New Orleans, La., *April* 9, 1890.

To the Survivors of the Medical Corps of the Confederate States Army.

Comrades:

The surrender of the Army of Northern Virginia on this day twenty-five years ago practically ended the struggle for the independence of the Southern States; and during this quarter of a century, death has thinned our ranks and our corps can now oppose but a broken line in the great struggle against human suffering, disease and death.

S. P. Moore, Surgeon General of the Confederate Army, is dead; Chas. Bell Gibson, Surgeon General of Virginia, Surgeon L. Guild, Surgeon A. J. Ford, Surgeon J. H. Berrien, Surgeon J. T. Darby, Surgeon W. A. Carrington, Surgeon S. A. Ramsey, Surgeon Samuel Choppin, Surgeon R. J. Breckinridge, Surgeon E. N. Cones, Surgeon E. S. Gaillard, Surgeon E. A. Lewellen, Surgeon A. N. Tally, Surgeon Paul F. Eve, Surgeon O. F. Manson, Surgeon Louis D. Ford, Surgeon Habersham, Surgeon James Bolton, Surgeon Robert Gibbs, and a host of other medical officers of the Confederate States Army, all are dead.

The Association of the United Confederate Veterans was formed in New Orleans, in 1889, the objects of which are historic, social and benevolent. Our illustrious Commanding General, John B. Gordon, Governor of Georgia, has ordered the United Confederate Veterans to assemble in Chattanooga, Tennessee, on July 1, 1890. It is earnestly hoped that every surviving member of the Medical Corps of the Confederate Army will meet with the United Confederate Veterans upon this important occasion, and promote by his presence and his councils the sacred interests of the Association of the United Confederate Veterans.

It is of the greatest importance to the future historians, and also to the honor and welfare of the Medical Profession in the South that careful records should be furnished the Surgeon General of the United Confederate Veterans, embracing the following data:

1. Name, age, nativity, date of commission in the Confederate States Army, nature and length of service of each and every member of the Medical Corps of the Confederate States Army.

2. Obituary notices and records of all deceased members of the Medical Corps of the Confederate Army.

3. The titles and copies of all field and hospital reports of the Medical Corps of the Confederate Army.

4. Titles and copies of all published and unpublished reports relating to Military Surgery and diseases of armies, camps, hospitals and prisons.

The object proposed to be accomplished by the Surgeon General of the United Confederate Veterans, is the collection, classification, preservation and final publication of all the documents and facts bearing upon the history and labors of the Medical Corps of the Confederate States Army during the Civil War, 1861–1865. Everything which relates to this critical period of our national history which shall illustrate the patriotic, self-sacrificing and scientific labors of the Medical Corps of the Confederate States Army, and which shall vindicate the truth of history, should be industriously collated, filed, and finally published. It is believed that invaluable documents are scattered over the whole land in the hands of the survivors of the Civil War of 1861–1865, which will form material for correct delineation of the Medical History of the Corps which played so important a part in the great historic drama.

Death is daily thinning our ranks, whilst time is laying its heavy hands upon the heads of those whose hair is already whitening with the advance of years and the burden of care.

No delay, fellow comrades, should be suffered in the collection and preservation of these precious documents. This task of collection of all documents, cases, facts relating to the Medical History of the Confederate Army invites the immediate attention and co-operation of his honored comrades and beloved compatriots throughout the South.

Respectfully,
Your obedient servant,
JOSEPH JONES, M. D.
Surgeon General United Confederate Veterans.

NEW YORK PASTEUR INSTITUTE
178 West 10th Street.
NEW YORK, *April* 9, 1890.

Dr. Paul Gibier, Director of the N. Y. Pasteur Institute, begs to inform the Editor of GAILLARD'S MEDICAL JOURNAL of the results of the preventive inoculations against hydrophobia performed at this institute during the month of March 1890. The institute was opened on the 18th of February last.

From the 20th of February to the 31st of March about 30 persons came to be treated, only nine were detained; the animals who bit the others being still alive, no further infection was therefore to be feared.

Nine persons have received the Pasteur treatment and are at present in good health.

In three cases hydrophobia was experimentally shown to exist (inoculation of the nervous substance of the dogs to other animals who died with the ordinary symptoms of hydrophobia) and also by this fact that in one case, a horse, and in another case, a hog, bitten by the same dogs, have since died from hydrophobia.

In six other cases rabies was very probable, but the dogs disappeared, or their bodies were thrown away without being sent to the institute.

The patients were four from New York City, three from Long Island, one from Maryland, one from Arkansas, of whom five were treated gratuitously.

Moreover, in order to be protected against the fatal danger of an accidental infection during the week, Dr. Paul Gibier has inoculated himself and three of his assistants.

PHARMACY AND THERAPEUTICS.

Aluminium Acetico-Tartaricum.—Dr. Max Schaeffer, of Bremen. Translated for *Notes on New Remedies*, from *Deutsche Medicin. Wochenschrift.* After a six months' thorough trial of Aluminium Acetico-Tartaricum, on a large number of patients, I feel justified in making the following favorable report on its action on the mucous membrane of the upper respiratory duct and also its indications in the treatment of various homogeneous affections.

I applied the remedy in its pure, dry powder form for a great variety of cases at first, but after first experiences with its action confined its use to the below mentioned affections strictly. Subsequently I experimented with strong solutions of various proportions, and fully confirmed the correctness of all my deductions from early trials. On applying the aluminium acetico-tartrate to the membranes of the nostrils or the larynx, the same assumed a white, or grayish white, cauterized appearance within a half minute. This almost immediate effect is due to the ready solubility of the remedy.

In this condition the patients experienced a feeling of dryness; but in a short time an intensely serous flow started from the nostrils, lasting several hours. This flow was so profuse with some patients, that the apertures of the nose reddened and became very sore, while on a repetition of the insufflation eczema on the upper lip developed within 48 hours. On the conclusion of the serous outflow the membranes again became normally dry.

After 48 hours the cauterization scales became detached. I first observed this feature after repeated applications of the remedy to one patient; the consequent examination showed that the same effect was present in all patients, even after only occasional applications. The detaching of these small scales sometimes caused light capillary bleeding.

The secretion now assumed a more mucous pus-like character, and the rest of the scales were detached at the same with the slough as it usually forms in chronic rhinitis, ozæna and pharyngitis sicca.

In ozæna after continued application the slough became thinner, more infrequent, and loosened more quickly than before; and the abortive membrane assumed a fresher and normal appearance. At the same time the odor of the ozæna secretion was lost sooner than with other treatment.

After 5 or 7 days the action of the remedy and the changes induced by its application entirely disappeared; the healthy membranes again became normal; the affected skin lost the redness, stretched tauter, and the scaling gradually disappeared.

Some patients complained of pain in the nostrils and in the head after the first application; those complaining were all affected with mild rhinitis chronica. Taking these patients out of the experimental category and applying the remedy only twice a week, ended the complaints and still gave satisfactory results from the remedy. In laryngitis acuta aluminium acetico-tartrate acts very much much like solutio argenti nitrici 1 : 5 aqua dest. *i. e.*, an unpleasant burning sensation and warmth ensue, lasting for a considerable time. The membranes of the larynx become very dry, this condition being succeeded by very profuse flow of secretion. The effect lasts longer than with the solut. argent. nitrici. I have given up the use of the remedy in applications to the larynx, except in laryngitis accompanied with profuse mucous-pus drainage and slough formation, because I find that old and tried remedies deserve preference.

My experiments covered the treatment of several hundred patients, and I found the aluminium acetico-tartrate a most valuable remedy in all diseases of the mucous membranes of the respiratory organs accompanied by slough formation, and would designate its action as caustic-astringent.

Its effect in ozæna was above all astonishing, and far exceeded any remedy heretofore employed by me for this disease. Evidently this is due to the excellent disinfecting properties of the remedy.

The disinfectant properties were recognized as long ago as 1881 by Schede, of Hamburg, who—after extended and searching experiments with the remedy in his surgical clinic—wrote to Jul. Athenstaedt, the discoverer of the acetate and tartrate aluminium combination in dry soluble form, that it was "a most excellent antiseptic, free from every unpleasant side-effects," and that he employed it with great success, preferably for children, and in all cases where the use of carbolic acid could not be undertaken with perfect safety. The very high price for the, at that time, new preparation prevented its general introduction.

As my own experience had likewise developed no ill side effects from applications of the dry powder, I did not hesitate to employ the remedy for douching the nose and for gargling. My desire was principally to find a substitute for chlorate of potash in treating ozæna, as chlorate of potash, owing to its toxic properties, must always be employed with great caution. Even if patients do not swallow any of the chlor. potass. solution while douching the nose, it is nevertheless probable that from constant use, sometimes extending for years, a decidedly evil effect is exerted on the whole system.

I directed the use of a teaspoonful of a 50 per cent. solution of alumin. acet. tartaric in 1 to 2 pints of luke-warm water as a nasal douche, and the opinions of all my patients were alike in ascribing decidedly greater relief from this than obtained with solut. potass. chlor.

The slough loosens more readily, and gradually disappears even without the simultaneous use of tampons. The active membranes assume a normal color, become sanguinous, and the fetid odor disappears quickly.

The alumin. acet. tartar. also possesses a great advantage over the widely used sublimate solution in not producing toxic conditions. In chronic pharyngitis with profuse mucous-pus secretions and sloughing, I employed 10 drops of a 20 per cent. solution in about 7 ounces of luke-warm water as a douche and gargle, with the very best results; the same treatment was also frequently taken when the disease was combined with pharyngitis sicca.

In the latter case insufflations of alumin. acetico-tartaric after removal of the slough, had the same astonishing effect on the secretions as in ozæna.

The remedy has other advantages over nitrate of silver preparations in that it does not cause pain, incites less tendency for sneezing, and does not stain the handkerchief.

The excessively strong effect of alumin. acetico-tartaric. may be reduced *ad libitum* by adding saccharum album. but I make no trials in this direction, deeming it best to make my experiments with the pure preparation.

I urgently solicit my fellow practitioners to undertake the treatment as outlined herein with the aluminium acetico-tartaricum, and confidently await general confirmation of the happy results attained in my practice.—*Notes on New Remedies.*

OREXIN HYDROCHLORATE (*Provincial Medical Journal*) is a new stomachic, stimulating the appetite, and increasing and accelerating digestion in the stomach. The salt occurs in colorless needles, readily soluble in water. The dose is about eight grains. Four grains shortened the period of digesting white bread by half an hour ; five grains equally hastened the digestion of meat. Free hydrochloric acid appeared an hour earlier when the remedy was taken. One or two doses daily suffice. It should be given in gelatin-coated pills, with much water. In doses of fifteen grains it produces giddiness, malaise, and fullness of the head.

Clinical Observations on Calomel as a Diuretic and Hydragogue.--R. Stintzing* performed a series of experiments with calomel with the view of determining its diuretic property. Among others, there were nine cases of anasarca, caused by cardiac insufficiency, due to valvular lesions; two were cases of mitral insufficiency, with nephritic complication; while six were cases of cardiac insufficiency, due to degeneration of the heart-muscle. Among the number were two cases of dropsy of hepatic origin; one hypertrophic cirrhosis of the liver, the other cirrhosis and carcinoma hepatis; and one case of dropsy of renal origin—chronic parenchymatous nephritis. The calomel was exhibited in six non-dropsical cases: acute and articular rheumatism, complicated by pericarditis and pleuritis; left-sided pleuritis with exudation; arthritis urica with contracted kidney; mitral insufficiency without concomitant dropsy; an old apoplexy with moderate left-sided hemiplegia; and lastly, splenic tumor, cause unknown.

The final results of these experiments, in which mercurialism was anticipated by the internal exhibition of opium and the use of potassium chlorate in solution as a mouth-wash are summed up by Stintzing as follows:

1. Calomel is a diuretic which acts more energetically than any of the agents similarly classed. This diuretic property manifests itself to a lesser degree in non-dropsical subjects, while in the various forms of dropsy it is most markedly displayed.

2. The greatest diuretic action by means of calomel obtains in the dropsies consequent to cardiac insufficiency, whether this is caused by valvular lesions or primary disease of the heart-muscle. (In one case the quantity of urine voided in twenty-four hours increased from 1600 c.cm. to 8350 c.cm.) This action does not obtain in cases where the insufficiency has reached the maximum.

3. Dropsical effusions due to other causes are not so amenable to the calomel treatment. This is true of those caused by obstruction of the portal circulation, and more particularly when chronic parenchymatous nephritis is the causative agent.

4. When heart disease and chronic nephritis co-exist, calomel is potent as a diuretic, if the former predominates.

5. In the treatment of dropsy of cardiac origin, the diuresis produced by calomel is materially aided by the watery fecal discharges simultaneously brought about by the same agent. The nearer the amount of water disposed of by this route, approaches the amount of urinary excretion, the better will the result be.

6. Since calomel is so prompt a hydragogue, it influences the sys-

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*Deutsches Archiv f. Clin. Medicin, 1888. XLIII.

tem most beneficially, inasmuch as it promotes the appetite, induces sleep, and stimulates the alimentary glandular appendages to increased functional activity.

7. In local exudation processes, e. g., pleuritis, pericarditis, etc., calomel as a diuretic does not act with sufficient promptness; hence exerts no curative effect.

8. The ill consequence of prolonged calomel treatment, such as stomatitis, salivation, diarrhœa, colic, etc., are anticipated with little difficulty by employing timely prophylaxis; this is especially true in all cases where polyuria obtains. If polyuria does not occur, mercurialish much sooner asserts itself.

9. Digitalis and the other diuretics are second in potency to calomel in producing diuresis. Calomel, however, cannot replace digitalis, because it lacks the power of influencing the heart's action as digitalis does. A combination, therefore, of the two remedies is considered very excellent treatment. Full doses must be given.

SUMMER DIARRHŒA.—Caharrer recommends the stoppage of milk as a diet, and substitution of liquid peptonoids with cocoa, pure brandy, and beef tea, or broths. Water must be allowed freely, given in small quantities, and often. In bad cases he gives:

℞

Acidi salicylic - - - -	gr. xxx.
Cretæ precip - - - -	gr. x.
Glycerin - - - - -	ʒ ij
Aqutæ rosæ - - - -	ʒ xiv.

M. Sig. Fluid ounce every hour for child one year old.

The following mixtures will prove of benefit in treatment of intractable cases.

LOOMIS' DIARRHŒA MIXTURE.

Take of tincture of opium - - -	½ fl. oz.
Tincture of rhubarb - - -	½ fl. oz.
Compound tincture of catchu (U. S. P.) -	1 fl. oz.
Oil of sassafras - - - -	20 mins.
Compound tincture of lavender, enough to make	4 fl oz.

SQUIBB'S DIARRHŒA MIXTURE.

Take tincture of opium - - -	1 fl. oz.
Tincture of capcicum - - - -	1 fl. oz.
Spirit of camphor - - - -	1 fl. oz.
Purified chloroform - - - -	180 mins.
Alcohol, enough to make - - -	5 fl. ozs.

THIELMANN'S DIARRHŒA MIXTURE.

Take of wine of opium	1 fl. oz.
Tincture of valerian	1½ fl. oz.
Ether	½ fl. oz.
Oil of peppermint	60 mins.
Fluid extract of ipecac	15 mins.
Alcohol, enough to make	4 fl. oz.

VELPEAU'S DIARRHŒA MIXTURE.

Take of tincture of opium, compound tincture of catchu (U. S. P.) spirit of camphor, each equal volumes. M.—*Medical Standard.*

SANITARY.

THE STATE BOARD OF HEALTH OF NEW YORK.—In submitting their ninth annual report, the State Board of Health of New York are able to express the conviction that their labors in the past have been devoted to the education of the people in the care of health and life, with the result of securing increased healthfulness throughout the State. The Board is so organized as to constitute a series of departments dealing with different questions affecting the public health. Thus many demands are made upon the Board as to suitable methods of sewerage, drainage and sewage disposal, and these are complied with, authorized experts advising the local bodies after due inquiry. Much the same applies to the pollution of streams and watercourses by sewage; and on this subject it is definitely stated that the experience obtained is to the effect that the noxious qualities of polluted water are not removed by a flow of many miles in an open channel, even though the water may have become thoroughly clarified by the complete sedimentation of the solids originally held in suspension, and hence that no such stream can safely be employed as a source of potable water-supply. Then, again, general sanitary investigations are carried out either as the result of complaints, or on account of the prevalence of unusual sickness in a place. In this way a number of important sanitary defects are brought to light; as, for example, the existence of sources of excremental contamination in connection with ponds used for the purposes of collecting ice. Strenuous efforts are stated to be in progress to prevent all pollution of water-supplies, and it is satisfactory to note that the various health authorities co-operate loyally with the Board in this respect. Dealing with the natural history of the various diseases met with, diphtheria is specially referred to, and, contrary to our own experiences, it is looked upon as much more a city disease than it is in England, where, until recent years, it has mainly affected rural areas. It is not regarded as being actually due to sewage nuisances, but when once introduced these are held to give it a power for spread and persistence which it would not otherwise possess. The body of the report, which is very voluminous, reproduces a number of the principal reports addressed to the Board, and it contains a large amount of statistical matter. As far as regards the State as a whole, and after making certain necessary corrections and allowances for defective returns, the general mortality for the year 1888 is given as 19·64 per 1,000 living.

THE COOKERY OF THE POOR.—A faculty of social science has, it is stated, been instituted at the University of Brussels, and Professor Berger, a Belgian authority in chemistry, has given a course of lectures on alimentary chemistry. In the first of them he came to the academic conclusion that it was possible to determine with precision the quantity of nutritive elements indispensable for the reparation of the power of a workingman, and consequently the amount of money necessary for purchasing this quantity, and that, therefore, when the other primary wants of a workingman were determined in the same way, the minimum of salary could be fixed with scientific accuracy. Questions of taste, digestibility and prejudice are, however, apt to be ignored in calculations of this kind, so that, although of value as a basis of information, they are far from having the practical use which their authors ascribe to them. The knowledge of the housewife and of the cook, and a familiar acquaintance with the habits and surroundings and tastes of the laboring classes, are necessary to give reality to such calculations.

The subject is one in which medical men, skilled as they are in the physiology of food, and accustomed to deal with the poor both in family life and in public institutions, might give great aid. That which our working classes greatly need is instruction in the art of braising, or slowly stewing at a low heat, combinations of meat, scraps of vegetables, etc. Anything more toothsome and nutritious than the vintagers' *pot au feu* cannot well be imagined. It is made with leg of beef, carrots, cabbage, and the like, and poured smoking into bowls over slices of thin bread. What a lesson it conveyed to our managers of soup kitchens, and what a meal could be made in this way for a very large family indeed !

A HANDBOOK OF PHYSICAL DIAGNOSIS OF DISEASES OF THE ORGANS OF RESPIRATION AND HEART, AND OF AORTIC ANEURYSM. By R. C. M. Page, M.D., Professor of General Medicine and Diseases of the Chest in the New York Polyclinic etc., etc. Second Edition, New York: J. H. Vail & Co., 21 Astor Place, 1890.

The fact that the first edition of this book was exhausted within less than a year, and that the second edition is now before us, is a proof that it has responded to a want. An examination of its contents conclusively demonstrates that it is well worthy of this favorable reception and impels the belief that it will grow in popularity among students and general practitioners. The author remarks in his preface that there is but little original to be offered at present on the subject of physical diagnosis; which is doubtless true so far as *facts* are concerned, but this excellent book may claim originality when the mode of exposition is considered. This mode of exposition is an objective one resting on the author's own observation and experience. The arrangement of the material is clear and intelligible and is based on the logical principle. The first chapter gives a lucid explanation of the different methods of physical examination of the chest under normal conditions The second chapter treats of the conditions obtaining in those diseases in which the respiratory murmur and voice are diminished, the bronchi obstructed as in bronchitis, asthma, emphysema and certain forms of atelectasis. The third chapter on the contrary, describes diseases in which the breath and voice sounds are conducted with more force than in health with corresponding increase of fremitus, respiratory murmur and pectorophony such as pneumonia, phthisis, cancer, hydatids; hæmorrhagic infarction. The fourth chapter is devoted to diseases in which the breath and voice sounds are interrupted in their transmission to the chest walls, with consequent diminution or absence of the fremitus and respiratory murmur, such as pleurisy, empyema, hydrochorax—pneumothorax, etc. The last chapter gives an admirable exposition of the physical condition pertaining to the heart under normal relations and then proceeds to demonstrate that found in pathological changes of this organ as well as of the large vessels. The illustrations are excellent and greatly facilitate an understanding of the text. The publishers are to be commended for the handsome way in which they have performed their task. Taken all in all we do not hesitate to declare that it is our firm conviction that it is the best book of the kind in the English language.

DIGESTIVE FERMENTS: A Consideration of their Nature, Action, Quality, Dosage and Incompatibilities with Clinical Notes; Compiled from Current Literature by the Scientific Department of Park, Davis, and Co. 1889,

A small book, very pretty in appearance and useful as to its facts.

THE USES OF ELECTROLYSIS IN SURGERY. By W. E. Steavenson, M. D. Cantab., M. R. C. P. In charge of the Electrical Department at St. Bartholomew's Hospital; Physician to the Grosvenor Hospital, for Women and Children; Late House Surgeon to St. Bartholomew's Hospital, and to the Hospital for Sick Children, Great Ormond St., London: J. & A. Churchill, 11 New Burlington St. 1890.

Electricity as a therapeutic measure has been rapidly pushed forward during the past few years, and much has been done to strip it of its empiricism and that veil of mystery, so savoring of quackery, which has to a certain extent surrounded it in former years, and to place it upon a scientific and rational basis. The little volume with which we are dealing treats only of the uses of electrolysis in surgery, and thus, of course, is in no sense a treatise on electricity, but it is a step in the right direction and will be of much value to those who know nothing about electricity and who are desirous of gaining some knowledge of it. The different appliances for the giving of electrolysis are well shown by cuts, the directions for their use are stated clearly and the diseases in which electrolysis has proved most efficacious, are pointed out and commented on in what seems, to our mind, a very fair manner.

A NEW MEDICAL DICTIONARY: Including all the words and phrases used in Medicine, with their proper Pronunciation and Definitions, based on Recent Medical Literature. By George M. Gould, B.A., M.D., Ophthalmic Surgeon to the Philadelphia Hospital, etc. With Tables of the Bacilli, Micrococci, Leucomaïnes, Ptomaïnes, etc., of the Arteries, Muscles, Nerves, Ganglia and Plexuses; Mineral Springs of the U. S., Vital Statistics, etc. Small octavo, 520 pages. Half Dark Leather, $3.25; Half morocco, Thumb Index, $4.25. Philadelphia: P. Blakiston, Son & Co.

An examination of this work convinces us that it is a most valuable addition to the list of books of a similar description. It contains a number of words not found in the dictionaries usually consulted by physicians and students. It is printed upon good paper, the type has a clear distinct face and it is bound so that it will lie open at any page. It is almost impossible in *such* a work to avoid mistakes. We call attention to one, under the term Phagocyte, *Metschnikoff* is erroneously called *Nutschnikoff*.

HÆMOGLOBIN OR BULLOCK'S BLOOD IN THERAPEUTICS. By F. E. Stewart, M.D., PH. G.

The author's claim to have discovered a food tolerated by the stomach when no other can be, if substantiated by further experience, will be a valuable boon to suffering humanity.

HOW TO PRESERVE HEALTH. By Louis Barkan M.D., Brooklyn. Published: 47 Broad St., New York.

This work deals chiefly in sanitary and hygienic matters. It is well written, but suitable to only a very small class of readers. It is meant for the general public, but unfortunately the general public are not prone to interest themselves in scientific truths no matter how interestingly the matter is served up to them. There is much in the book which medical men would do well to refresh their memories with, but medical men as a rule have so much undiluted medicine to read, that they look with indifference upon all books of this kind which are announced as being intended for popular reading. It is a pity that this should be the case for Dr. Barkan's book contains much out of the way information, which one would hardly know where to look for in regular treatises.

SEVENTY-SECOND ANNUAL REPORT OF THE N. Y. ORTHOPÆDIC DISPENSARY AND HOSPITAL.

This is one of New York's most useful charities, and is confined entirely to benefitting children with spine and hip diseases and other deformities. The report gives a very pretty insight into the vast good done among the poor by this hospital both in the house and in the outdoor department. In the lower classes of life children are so much more exposed to accidents than in the better classes, that the large number requiring this kind of help is really astonishing.

The management of this hospital is excellent but would be much better if the building could be enlarged as the crowds at the clinics embarrass every one in attendance.

The House-Surgeon, Dr. Joseph Taylor Clarke, is admirably fitted for his duties and much valued by the inmates of the "House."

ROBERT BRETT: HIS LIFE AND WORKS. E. P. Dutton and Co.

The moral power which a physician, in the ordinary course of a busy life can exert in the world is illustrated in the story of 'Robert Brett: His Life and Works.' This English gentleman was a general medical practitioner in Stoke-Newington, where he spent the best years of his life, dying in 1874. By sheer force of ability and character and straightforward unselfishness he held a foremost place among the great men of Church and State. The Rev. Dr. T. W. Belcher, who has been both medically and theologically educated, is his biographer. His book of over four hundred un-indexed pages is not only a good picture of a noble character, but incidentally gives an American reader an insight into social, medical, philanthropic, theological and political currents of life in England.

THE CURE OF HERNIA BY THE USE OF BURIED ANIMAL SUTURE. By Henry O. Macy A.M., M.D., L.L.D.

THE NEW YORK CANCER HOSPITAL, FIFTH ANNUAL REPORT.

This magnificent charity was the outgrowth and the result of much pain and anguish experienced by rich and highly endowed ladies and gentlemen, who conceived the idea of making their personal suffering the foundation of a method which would relieve the pains and sorrows of the immense throng of helpless invalids who had no earthly compensation to lessen the horrors of death from cancer.

Two hundred and fifty-five patients were treated in this hospital during 1889. None were refused admittance, poverty was no barrier, but only an additional reason for admittance.

We trust that the spirit in which this charity was formed may long preside over its councils and render its results always beautiful.

AN EXPERIMENTAL STUDY OF INTESTINAL ANASTOMOSIS. By Dr. J. D. S. Davis, Birmingham, Ala.

This is a most thoughtful and analytical paper. If it had not been so generally read in the pages of the *Times and Register* we would take pleasure in republishing it.

TOBACCO AMBLYOPIA. By Leartus Connor, A. M., M.D.

In this interesting paper the author has collected twenty-seven cases of well marked amblyopia and reports two most instructive cases of his own that adduce clearly what further evidence could have been asked for of this curious effect of tobacco poisoning.

CHLORALANIDE.

This is a pamphlet sent us by Lehn and Fink, upon the subject of their new hypnotic which we hope will prove useful in its particular sphere.

A RATIONAL BRACE FOR THE TREATMENT OF CARIES AND VERTEBRÆ. By Ch. F. Stillman, M. Sc., M.D., Chicago, Ills.

A PRACTICAL SPLINT FOR INFLAMMATORY CONDITIONS OF JOINTS. By Ch. F. Stillman, M. Sc., M.D., Chicago.

TWENTY-SECOND ANNUAL REPORT OF THE NEW YORK ORTHOPÆDIC DISPENSARY AND HOSPITAL.

THE TREATMENT OF TORTICOLLIS. By Ch. F. Steadman, M. Sc., M.D., Chicago.

MISCELLANEOUS.

THE FOLLOWING PRESCRIPTION was given by Dr. Rush to a gentleman in Philadelphia, ninety-one years ago. It has been carefully kept by the family and is sent to this JOURNAL by one of Mr. Eyre's great grand-daughters. In its accordance with the best system of treatment at the present day it is quite remarkable.

DIRECTIONS FOR MR. EYRE.

Keep your bowels gently open at all times by chewing rhubarb. The root alone must be used for this purpose. When you feel yourself indisposed with headache, sickness, or lassitude, take one or two of the opening pills three times a day, 'till they operate. Avoid fatigue, the hot sun, and the night air of the West Indies. Live chiefly upon vegetables, with a little salt meat. Drink your wine diluted with water. Never go abroad in the morning before you take a light breakfast. Bathing morning and evening, when at sea, in salt water, or in the West Indies if you sleep on board your vessel will be useful in preventing an attack of the liver. *Believe no indisposition trifling in a sickly country.* Retirement, rest, thin drinks, and a little opening physic, used *early* generally prevent violent diseases. Wishing you health and success in your present scheme of business, I am, dear sir,

Yours sincerely,

Phila., July 11, 1799. BENJ. N. RUSH, M.D.

NEW METHOD OF EXCISING THE WRIST.—Mr. Edward Thompson, Surgeon to the Tyrone Infirmary, has lately described (*British Medical Journal*) a method of excising the wrist joint which he believes has not hitherto been recommended. In a case of caries of the carpal bones, in which the disease appeared to be limited to the first row of carpal bones and to the lower extremity of the radius and ulna, he determined to try to save the hand, although the patient, whose sufferings were acute, was anxious for amputation. On the back of the hand, and within half an inch of its ulnar border, there was a large shallow ulcer. The outer edge of this sore was selected as the site of the incision, which ran between the tendons of the extensor communis and minimi digiti, and was about four inches in length. The joint was freely opened, so that its interior could be thoroughly examined. A gouge was then introduced, and the semilunar bone gouged completely away; then each of the neighboring bones was firmly caught with strong forceps, slowly twisted from its connections, and removed. The diseased ends of the radius and ulna were gouged away, and afterwards both bones were sawn across immediately above the seat of disease. A small incision was made on each side of the joint as close as possible to the lever of the floor of the joint, and a drainage-tube was inserted. The wound was stuffed with idoform gauze and dressed antiseptically. A straight splint was placed under the forearm and hand, the palm being supported on a roller bandage. Recovery was uninterrupted and speedy, and the patient has now a useful hand. Mr. Thompson claims for the method that "it is easy of performance and free from danger, and that it does not tear or injure any of the tendons, vessels, nerves or deeper structures. It is quite bloodless, and does not require removal of any portion of bone which is sound and healthy."—*London Med. Recorder.*

EFFECT OF SLEEP ON THE GASTRIC JUICE.—Some investigations which have recently been carried out in Professor Manassein's wards in St. Petersburg, by Dr, S. L. Rappoport, on the effects of sleep on the secretion of the gastric juice, are published in the last few numbers of the *Vrach*, and tend to show that the digestive functions of the gastric juice are materially affected by sleep. The experiments were made on the human subject, the gastric juice being withdrawn by means of a flexible india rubber œsophagus sound, the introduction of which is said not to have caused any inconvenience to the subjects of the research. The quantity of the gastric juice secreted during sleep was shown to be very much less than that secreted during waking hours; the chloride of sodium, as well as the hydrochloric acid, were diminished; but the secretion of pepsin did not seem to be much affected. By means of experiments conducted in the laboratory, it was found that the digestive power of gastric juice secreted during sleep was lower than that secreted during waking hours, the difference apparently depending mainly upon the lack of hydrochloric acid. With regard to the rennet ferment, Dr. Rappoport was unable to demonstrate any alteration in its secretion during sleep.—*Dietetic Gazette.*

EXCRETION OF ALBUMEN IN NEPHRITIS.—Sehrwald's of Jena (*Deutch. Med. Zeit.*), gives us the following as the result of his observations in nephritis.

1. The quantity of water excreted by the kidneys does not depend on the quantity ingested.

2. The more work the epithelial covering of the glomeruli has to do, the more albumen is allowed to pass through.

3. In this respect, poor nourishment is more unfavorable than hard work, and a nourishment poor in albumen increases the quantity of albumen excreted.

4. The quantity of albumen excreted is proportional to the quantity of water and salts excreted; but bears no relation to the quantity of urea excreted.

5. A high temperature increases the excretion of albumen by increasing the metamorphosis of tissue.

6. A moderate quantity of albumen combined with considerable carbohydrates and fats is recommended as diet in cases of glomerulo-nephritis, where, however, the epithelium of the tubules is diseased, albumen should be excluded from the diet.

7. A warm dry, equable climate is the best suited to these cases.

MEDICAL NEWS AND NOTES.

SOUTH CAROLINA'S Examining Board passed twelve candidates out of eighteen.

DR. C. D. PALMER has been elected President of the Cincinnati Academy of Medicine.

VIRCHOW has made an attack upon the word "luetic." It was, he says, "originally a Leipzig discovery, but it has developed to the rank of a Germanism. It is etymologically incorrect. Lues is a Latin word through the Greek, and means pestilence, not syphilis, and 'luetic' cannot by any possible twisting be properly derived from it. Still it is convenient and euphemistic, and enables the physican to refer to syphilis without alarming the patient."—*Med. Record.*

A NEW crematory is to be built in Paris, which will do its work in less than an hour.

DR. N. SENN and Dr. Chr. Fenger have been elected regular professors of surgery in The Chicago Policlinic. In addition to clinical work, they will present a special course in abdominal surgery twice yearly.

THE Illinois State Medical Society will meet on May 6th, as also will the Missouri Society.

UNDER the encouraging title of "Enterprising Canadians," the *Canadian Practitioner* refers to two late students of medicine in Toronto, who have now settled in Buffalo, N. Y., and advertise as their specialties, "diseases of the heart, lungs, liver, stomach, kidney, nose, throat and skin." As the years roll on, we presume they will add other organs to the list, finally including among their "specialties," it may be, diseases of the pancreas, thyroid gland, and supra-renal capsules. Indeed, we think that these latter organs, well advertised as specialties, would prove very fetching, and we are surprised that some thoughtful and progressive quack has not already taken them up.

For inviting attractiveness, however, the following legend, which a friend tells us he lately saw conspicuously posted before a physician's office in San Francisco, surpasses our wildest dreams: "Dr.——, Specialist in Diseases of the Ear, Eye, Nose, Throat, Urethra, and Rectum."

THE SIZE OF FRENCH FAMILIES.—A law was passed not long ago in France, giving certain privileges to the fathers of more than seven children. An inquiry having been made to determine who were to benefit by the provisions of the law, it was found, according to *Lyon Médical*, that in France at present there are 2,000,000 households in which there has been no child; 2,500,000 in which there was one child; 2,300,000, two children; 1,500,000, three; about 1,000,000, four; 550,000, five; 330,000, six; and 200,000 seven or more.

THE Convention for the Revision of the United States Pharmacopœia will be held in the city of Washington, May 7th, at noon.

PLASTER-OF-PARIS SPLINTS.—Dr. Powell, of Toronto, recommends the following method of applying plaster-of-Paris splints for certain kinds of fractures of the leg: "The leg is to be bandaged with cotton batting, which for the purpose is torn into strips four inches wide and applied as a roller. Using the sound leg as a model, to save the injured one from movement, a pattern is cut which will cover in all of the leg excepting a space an inch wide along its anterior aspect. Deep slashes opposite the heel allow the part for the sole of the foot to be brought into a right angle with that for the leg, without forming clumsy folds at the ankle. From this pattern four or five layers of scrim or from six to nine of cheese-cloth are cut. Then, with extension made and the foot properly held, the strips are to be saturated with a cream made by sifting, not stirring, plaster into warm water, smoothed one upon another, applied to the posterior aspect of the limb, interleaved by the slashes at the ankle so as to hold the foot at right angles with the leg, molded to the part, and then firmly bandanged to it with a cotton roller." "Scrim" is a coarser and stronger material than cheese-cloth, and hence a smaller number of layers suffice to make a firm splint. This is a modification of the well-known Croft's splint, and it is recommended as being very easily applied, comfortable, durable, and thoroughly efficient.

EXCISION OF THE PATELLA.—In the November number of the *Revue Médicale de la Suisse Romande*, Dr. E. Kummer, formerly assistant to Professor Kocher, contributes an interesting and successful case of extirpation of the patella. The patient, a woman æt. 25 years, had suffered for three years from multiple abscesses around the patella. In June, 1889, Dr. Kummer excised this bone because it contained a tubercular deposit. The synovial membrane near it was healthy. In closing the wound the ligamentum patellæ was united with the fascia lata and the termination of the vastus internus. The leg was fixed upon Volkman's excision splint, and in three weeks the wound had healed under a first dressing. In the following September this patient was shown at the Société Médicale de Genève. The woman could extend her leg almost to the normal degree; flexion was somewhat interfered with. This gradually improved. The woman can now walk four or five hours without limping or marked fatigue; she can kneel without pain, and walk up and down stairs like a healthy person. Dr. Kummer claims that resection of the patella may be practised without altering the power of walking or sensibly hindering the movements of the knee-joint.

THE ANTISEPTIC POWER OF COFFEE.—Dr. Lüderitz has recently made a number of observations on the destructive power of coffee upon various microbes. He found that the organisms all died in a longer or shorter period—e. g., in one series of experiments, anthrax bacilli were destroyed in three hours, anthrax spores in four weeks, cholera bacilli in four hours, and the streptococcus of erysipelas in one day. It was, however, remarkable that good coffee and bad coffee produced precisely similar effects. He believes that, as previous observers have suggested, the antiseptic effect of coffee does not depend on the caffeine it contains, but on the empyreumatic oils developed by roasting.

A DANGEROUS PRESCRIPTION.—A pharmacist writes to the *Bull. Com.*, stating that he often gets a prescription as follows: Chlorate of potassium, 5 gm.; dist. water, 120 gm.; simple sirup, 30 gm.; a dessertspoonful every half hour. "Children who take this," adds the pharmacist, "always die. M. Brouardel cites six cases of death in children after using a small portion. Can I refuse to dispense this mixture?" The editor says the pharmacist cannot refuse; he can only state the facts to the doctor, "who will be likely to attribute the cause of death to the gravity of the disease." He adds: "Physicians, on account of the scant information we have as to the physiological action of chloride of potassium, use this medicament with the same imprudence and the same indifference as they have formerly shown." —*Am. Jour. Phar.*

AN Irish doctor lately sent in his bill to a lady as follows: "To curing your husband till he died."

LA NOUNA is a new disease, epidemic at Rome. The chief symptom is a lethargic sleep from which it appears impossible to awaken the patient. If it reaches this country, Americans will have a new sensation.

DR. G. M. HUMPHREY has just published a book in London on "Old Age." He summarizes information in regard to nine hundred octogenarians, and his conclusions seem to point toward heridity and placidity as the chief elements in longevity which is a very natural idea and one which might have been suggested without such laborious investigations.

ONE OF THOSE SINGULAR MALFORMATIONS described as "parasitic fœtus" has been attracting some attention at Demerara. A coolie was admitted into the Colonial Hospital suffering from a tumor in the right loin. The man died, and at the post-mortem examination the "tumor" proved to be possessed of a cranium, with hair attached, an imperfect nose and mouth, no hands or feet, but the rudiments of male genitals. The subject of this "autosite" was thirty-two years of age.

TREATMENT OF SNAKE-BITES.—Dr. Early writes to the *New Orleans Medical Journal* that he has treated many cases and has a record of twenty-five very bad cases, all of which were treated by the free use of olive oil internally and externally. He has never used any other treatment, and states that his experience for the past thirty-nine years has fully demonstrated its correctness.

EDITORIALS.

THE SICK PHYSICIAN.—A short time ago there appeared in one of the foreign journals, under the heading "Self-maltreatment," a statement to the effect that an ex-naval surgeon became sick, and relying on his own professional knowledge, insisted upon diagnosing his own case, prescribing for himself, and would have no other medical adviser. He believed himself to be suffering from bronchitis, applied such remedies as he thought suitable and then expressed himself as feeling much better. The next morning he was found dead in bed, and the post-mortem examination showed fatty degeneration of the heart, and acute pneumonia. Such a course and such a result are most certainly to be deplored, not only because the life of a single physician is lost, but also on account of the moral effect upon the laity. After reading an account of such a proceeding as this, it is natural to say, upon first thought, that there is no one to blame but the deceased. This is probably true to some extent. The man may have been obstinate, and may have refused to send for some neighboring physician because he thought that his own opinion was more reliable than that of his brother practitioner. He no doubt considered that he could best diagnose his own case. But it is very well-known that a sick doctor often knows very little indeed about his own condition, no matter how skilfull he may be in diagnosis where other sick people are concerned.

One has only to look back at some serious illness he has had at some period of his life and he will remember that, although he knew at the time that he was ill, his ideas as to the extent of his illness and the means for his relief were exceedingly vague. This is a general experience with physicians and should go far to prove that a doctor should be called in upon the slightest occasion to a sick member of his profession and even earlier than in the case of a layman. This is doubtless the proper course to pursue, but we know that it is rarely done. And why? We have already enumerated several reasons, but lying beyond them all, and weightier than them all, is the conviction in the mind of the sick man that he has no right to engross the possibly begrudged time, which spent on other patients would be paid for. And he has not always drawn upon his imagination for the foundation of this idea. That this should be so, this which every physician will with regret acknowledge to be sometimes true, shows, first of all, an unworthy selfishness on the part of physicians in good practice, and next, that they have forgotten the noble doctrine of personal devotion to members of the profession and their families, which expressed first by Hypocrates has called forth the enthusiasm of succeeding thousands, and which may have been one of the inducements which they themselves were mostly influenced by, in entering the medical profession. We do not, of course, claim that there are not many exceptions to the unhappy state of affairs which we have depicted. In their consulting rooms, even the busiest specialist will cheerfully give to his obscure brother the benefit of his advice and of his splendid judgment. He has achieved the distinction of being able to keep his other patients waiting, but even so, does the poor doctor who is ill, feel that he is welcome again in that choice consulting room?

Physicians attend, kindly and carefully, cases of illness in the profession where the sufferer is a friend, where he is on the same professional level, or where the case is one of special interest. And the true-hearted in our ranks, may they always be blessed, go day and night to the cot of the poor brother who is without earthly hope or consolation except as it is brought him by the ever longed for and never-failing visits of his physician.

Other exceptions occur frequently, as we all know, when policy demands that physicians should "assume a virtue though they have it not" and with so many exceptions one might almost believe that medical men receive from each other all needed attention, if it were not for such accidents as the one recorded above and from a few other sad facts reaching us from nearer home.

Of course, in the vast majority of instances, those physicians who have attained any eminence whatever, or who have been practicing their profession for any length of time have a certain number of personal friends among their fellow-practitioners who would be willing to do almost anything for them, but this is not so with the comparatively large number of young men, good, honest, hard-working young fellows, who have been pursuing the practice of their profession for a short time only, and are trying to make their way in the face of great difficulties. Many of them hardly have a dollar more than actual living expenses, and many think themselves fortunate if they can make both ends meet. They are miles away from their families and their friends. What becomes of one of them if he succumbs to some serious illness? He is left to the icy indifference of a city boarding house, the last places of all others for a sick man! The landlady assures every one that she is the most kind-hearted and benevolent person in the world but she has no time for attendance on a sick boarder. The fire goes out in his room and he can call no one to make it up, he is thirsty, but is afraid to get up in the cold room for a glass of water, the ordinary food from the table is sent to him, which of course, a sick man is unable to eat and thus his sufferings go on increasing. After a longer or shorter time a physician is asked to see him. He comes, prescribes for him, but he too is frequently a very busy man and is not able to call as frequently as is necessary. Is it any wonder that the sick physician thus feeling himself neglected, loses faith in the goodness of humanity and the nobility of his profession. If he recovers he will endure much suffering before he will again ask anyone to help him in his troubles. Suppose the illness does not end in recovery, but in death, how much of the responsibility for the untimely end of one who was consecrating his life to the alleviation of human suffering, rests upon us, who have not always fostered and encouraged fraternal feeling among our fellow practitioners, and have not always taught the younger and the more unfortunate members of our profession that, in their troubles, they would meet from the profession collectively and separately, all kindness and consideration?

The state of things which we have been considering is happily not found in the country nor in rural towns. It is in truth due in great measure to the intense hurry and concentrated driving work of city life, which becomes greater every year, and which must finally result in a different order of things.

The time and the opportunity to be kind to a sick competitor and to be often at his bed-side with cheery sympathy, is one of the things which makes the country practitioner the delightful creature that he is in the exercise of his profession, and the city doctor may not hope to emulate him in this. But he may so disguise his haste, and cultivate the kindness which is generally dormant in him and only pushed out of sight by what seems necessity, as to leave his sick brother grateful to him and the better for every visit which is paid him. It is sad, indeed, to hear a physician say in misfortune, as the writer heard said only a very little while ago, that he never so fully realized the humiliation of being a poor man as when he was obliged to ask for medical attendance.

TUBERCULOUS SOLDIERS.—The French Minister of war has issued a circular to commanding officers of regiments, containing instructions for arresting the propagation of tuberculosis, the tenor of which is to the effect of all soldiers presenting symptoms of tuberculosis should be immediately removed from the army, and that the medical officers should examine all the young soldiers who appear to be delicate, with a view of discovering any tubercular tendency. They should not, however, base their conclusions exclusively on the size of the chest, for daily experience proved that there was no absolute relation between the development of the thoracic cavity and the integrity of the respiratory organs, but they should be based on the signs revealed by auscultation, percussion, and the constitutional *ensemble* of the individual. Every man presenting evident signs of "specific bronchitis" would be proposed for immediate removal; whereas, in the case of "suspected persons," removal would be postponed for three months. The circular adds that this method, partially applied, has given the following results. In 1867 phthisis caused 2·23 deaths per 1000; in 1876 it caused only 1·45 per 1000; and in 1887 the proportion fell to 0·99. This last figure is nearly the same as that which was found in the Prussian army (0·83 per 1000), whereas the mortality is 2·14 per 1000 in England, 1·7 in Austria, and 1·1 in Belgium.

THE NEW YORK LEGISLATURE is considering a report of the law requiring the Medical Colleges of the State to exact a preliminary examination of students under the auspices of the Regents of the University. The motion of appeal has already passed the Senate. Perhaps it is best that hasty legislation should be hastily undone, the last haste being the result of good judgment and a year's experience, but it is certainly unfortunate that the unmedical public should be presented with so good a theme for the captious criticism with which they are always ready. Why not modify the law so that it should apply only to students beginning their medical course and in such colleges as have not established a preliminary examination?

WHAT a commentary upon "ignorance in high places" is offered by the Governor of Maryland refusing to sign the Bill for raising the standard of medical education in that State "His Excellence" has however been so thoroughly talked to by medical men from all sections of Maryland that he has now almost committed himself to the hazardous action of signing the Bill, should the Executive Officers of the State be called together again, to sign other bills.

In the mean time the spring catalogues must be issued and if another long period of waiting becomes necessary, great injustice is done to the colleges.

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GAILLARD'S MEDICAL JOURNAL.

Vol. L. NEW YORK, JUNE, 1890. No. 6.

ORIGINAL ARTICLES.

ARTICLE I.

EYE STRAIN: Its Causes and Symptoms; and an Easy, Accurate and Inexpensive Method for its Detection by the General Practitioner.

Read before the N. Y. County Medical Society, Feb. 24, 1890.

By Dr. F. Valk, New York.

It has been stated that every specialist, whether or not he feels inclined to enter general practice, should at least inform himself of the diagnosis and treatment of general diseases, and so the practitioner should endeavor to acquaint himself, as far as his many duties will permit, in the diagnosis of the conditions of the eye, not only as regards the diseases of that especial and important organ of sight, but the condition of refraction that may exist. This is particularly necessary, as at the present time it is a well-known fact that certain conditions of refraction, otherwise than normal, will cause certain phenomena in other parts of the human system; in other words, as so well expressed by Dr. Thomson at the last meeting of this society, "that certain afferent impulses may cause functional nervous diseases."

Dr. Hughlings Jackson, in his presidential address to the Ophthalmological Society, stated that he had found his knowledge of ophthalmological work of great assistance to him in the diagnosis and treatment of general diseases, or, as he calls it, the "luckiest thing in his medical life," and further he says, "Since six cranial nerves and the sympathetic nerve supply the eye and its apparatus, it was evident that without a good knowledge of eye diseases the thorough investigation of many morbid affections of the nervous system could not be carried out."

I am inclined to believe that the peripherial irritation, caused by eye strain, either when the intrinsic or extrinsic muscles are involved, may tend to cause other nervous phenomena, and may be the exciting cause of the manifestations of even functional chorea and epilepsy. Certainly in all these cases the physician should satisfy himself if there is any existing error of refraction, that may produce eye strain, and if so that this condition should be corrected, as one of the means toward relief and cure.

For these reasons I offer this paper to the society, hoping that the suggestions which it may contain will be of practical service to the general practitioner in the intelligent treatment of the cases which come before him, with such subjective symptoms that may point to the refractive condition of the eyes as an exciting cause.

All of you are, no doubt, aware that errors of refraction may and do cause various other reflex phenomena, that will not yield to the usual remedies indicated in certain complaints, and yet when the refractive errors that may exist are properly corrected, by suitable glasses, these subjective symptoms will rapidly disappear.

I have lately read a very interesting monograph by Dr. J. H. Woodward, of Vermont, in which he gives the histories of one hundred and fifty cases of headache, vertigo, lachrymation, nausea, epileptiform convulsions, migraine, neuralgia, etc. Many of these cases he was able to note the final results after the use of suitable glasses, and he reports that at least eighty-five per cent. were relieved, and only sixteen per cent. failed to find relief, while the results in the balance were unknown or refused to follow his advice. All of his cases had certain refractive errors, that could have been easily recognized by the method I propose to demonstrate to-night.

As regards the frequency of the various conditions of refraction and their symptoms, I would refer you to a monograph by the late Dr. C. R. Agnew, reported in 1876, on the refraction of 1,060 cases of asthenopia, or those who came to him suffering from the symptoms of eye strain. In this he reports that there were two hundred and eighty-one (281) with normal or emmetropic eyes; that he found about 400 with the hyperopic eye, and its complications; 145 with the myopic eye, and the balance or 234 with an unequal curvature of the cornea, or astigmatic in various degrees.

I do not propose to take the time of this society with the report of the many cases that have come under my observation when the error of refraction existing in the patient's eye was the cause of certain reflex symptoms, but will endeavor to place before you the subjective symptoms, their cause and effect, and then explain in a few words, and in as simple a manner as possible, an objective method, by which a physician can readily tell what is the refraction of the eyes.

What are the various conditions of the eye-ball that will produce an error of refraction? We divide them first, according to the length of the optic axis, in which we find that in the emmetropic or normal eye, that the retina is placed distant from the dioptic or refractive apparatus of the eye, that parallel rays of light or rays from infinity will exactly focus upon this membrane, when the eye is in a state of complete rest; in other words, the retina is placed at the focal point of the dioptic apparatus. This is a condition of refraction not often met, and one that seldom causes any symptoms of eye strain.

Next we have the most frequent condition, the hyperopic eye, in which the length of the optic axis is too short, as the retina is situated inside of the focal distance, and consequently perfect vision cannot be accomplished without the continued exercise of the nervous impulse that controls the action of the ciliary muscle.

Opposite to this condition, we have the myopic eye, where the optic axis is too long, and we find the retina beyond the focal distance.

Now, in this eye there may be no strain at certain distances, yet under particular circumstances, or a faulty correction, the eye may feel the strain on the ciliary muscle, particularly if the glasses in use are too strong, as is very apt to occur when the person wearing them becomes presbyopic.

Lastly, we come to the astigmatic eye, with its unequal curvature of the cornea. Its two principal radii of curvature having one longer than the other, causing simple astigmatism, and, associated with this condition, we may have the same changes in the antero-posterior diameter, as before mentioned, forming compound astigmatism. To counteract this change in the curvature there must be an unequal contraction of the ciliary muscle in the different meridian, with consequent strain and irritation.

If we consider the effects of these errors of refraction on the eye, we may class them under the general name of eye strain—that is, we have a strain upon the muscle of accommodation within the eye-ball, and from the almost tonic contraction of this muscle in some eyes, a contraction that is increased when the eyes are used at close work, we can appreciate that this may be a source of irritation shown by certain phenomena in other parts of the system.

Now, this muscle, the ciliary, is in almost constant use, as you are no doubt familiar with its action, being circular and composed of radiate and circular fibres extending backward from the Zone of Zinn to the ciliary processes, it controls, by the action of its fibres, the refractive power of the crystalline lens, whereby all rays of light entering the eye either parallel or divergent are brought to an exact focus upon the retina at its most sensitive part, the macula lutea.

We may then place the chief and determining cause of eye strain upon the action of this ciliary muscle, as it may be affected by overwork at the near point. We can hardly realize how delicate this action is in its mechanism, its correct adjustment of the rays of light entering the eye, its constant action in the adjustment of these rays, its complex construction, and its rapid response to the varying distances to which the eye may be directed—a mechanism so delicate and accurate that any deviation from the normal must at some time produce certain subjective symptoms that we call eye-strain.

Let us now glance at these subjective symptoms and we will find them of sufficient importance to need a careful examination of the eyes. The most common will be headache, more or less constant, generally in the frontal region and about the eyes, but it may also be noticed in the occipital region; at other times will not be located at any special part of the head; then the pain may exist in the eyeballs with a feeling of strain about the eyes, the vision blurs at times, and they can only read for a short interval, particularly at night. You will generally find these symptoms in young persons at various ages.

Referring further to the symptoms having special reference to the eyes. They will tell you the eyes are weak, that they burn at times, they water and have a strained feeling; they may have pains in the back, floating specks before the eyes, then the eyelids will stick together in the morning—due to an irritative condition of the conjunctiva with increased secretion, dizzy sensations and even vertigo may also be complained of.

These symptoms you will find associated with the eye-strain of the intrinsic muscle of the eye, while if we pass to the extrinsic muscles, or those on the outside of the globe that tend to hold the eyeball steady and fixed upon a given point, then we still find very similar symptoms; but I think, in reference to the headache of eye-strain, that where the refraction is at fault the pain will be mostly in the frontal region, and when any of the recti muscles are insufficient to keep the visual axis fixed upon a point that the pain will now be referred to the occipital region and the back of the neck.

I will not discuss the subject of the correction of these refractive errors, nor weary you with the troublesome fractions and figures that seem to be the delight of the specialist and the bane of the general practitioner, but will now place before you a test for the diagnosis of all the errors of refraction, and leave its application to yourselves.

Retinoscopy is the name of this simple test, although it seems to me that every specialist considers it necessary to coin a new name each time he writes on the subject, and so we find the names Pupilloscopy, Sciascopy, The Shadow Test, etc., used by different writers, but if we consider the phenomena which takes place in the use of this test we must decide that the term I used first is the most suitable and correct. During the last two years or more I have not noticed the movements of any shadow, but simply the movements of the illuminated portion of the retina as it passes across the pupillary space. Also we may notice that if the pupil is widely dilated the refraction at the periphery of the cornea will be different from that of the centre, (owing to its greater curve,) that you may find two distinct apparent shadows, moving in opposite directions, which would indicate the condition of hyperopia in the centre, and myopia at the periphery.

Let me place this test before you, and show that any physician can at once easily decide any existing error of refraction in the case before him, and also the simple apparatus necessary for the application of this test. First we require a piece of looking-glass, and a good light placed above and a little behind the person to be examined, while the room should be darkened as much as possible.

Surely one cannot object to the cost of this piece of glass, which should be three inches long, by one and a half inches wide, with a small portion of the quicksilver rubbed off the back, making a clear space one-eighth of an inch in diameter, and about one inch from the end, (as I show you now). They may also be obtained from Meyrowitz Bros.; either plain or concave, somewhat more elaborate but no more serviceable in the use of this test.

With this little instrument and the patient seated in the position as I have explained, the examiner then sits at about forty inches distant from him. Placing the glass before the right eye, and looking through the aperture, the reflected pencil of light from the mirror is projected into the eye to be examined. At the same time we direct our patient to look beyond and just past the ear of the examiner. That is if the right eye is to be examined, then let the patient look beyond the right ear of the examiner.

If the room is sufficiently darkened the pupil will be dilated so as to make the examination easy, but if not a very weak solution of atropine may be used, or a two per cent. solution of cocaine, a few drops placed in the eyes about fifteen minutes before the examination is made.

What do we see when we examine the eye? The pupillary space has now changed from its black color to that of a beautiful orange red with some indistinct apparent shadows at the edge of the pupil as the mirror is moved.

Now, slightly and rapidly rotate the mirror on its vertical or horizontal axis, being careful not to move the head, and if there is any existing error of refraction in the examined eye, we will notice that the bright illuminated part of the retina moves across the pupillary space, followed by what appears to be a dark shadow, but which is really a portion of the retina not illuminated.

It is the movement of this bright area that will decide for us the error of refraction or tell us if the refraction of the examined eye is normal, as if we turn the mirror to the right on the vertical axis and we notice that the illuminated area moves in the *same* direction, then the eye must be hyperopic or shortened in its antero-posterior diameter and the image we see is a virtual image of the illuminated part of the retina.

Again, if with the same rotation of the mirror we find that this movement of the bright area is in the *opposite* direction, that is as we turn the mirror to the right, the illuminated area seems to pass to the left then the examined eye must be myopic or increased in its antero-posterior diameter, and we see a real inverted image of the illuminated part of the retina.

Then if we notice these two movements of the reflex are very rapid, uncertain, very bright, filling the entire pupillary space, the examined eye will be almost, if not fully, emmetropic ; there will be no existing error of refraction. This being considered, the normal eye should not require glasses.

If astigmatism be present in the examined eye, and by astigmatism I mean an unequal refraction of the different meridians, with their refractive planes, so that rays of light " from a point will not be reunited on a point," we will notice a difference in the movements of the retinal reflex. Suppose that we find in the vertical meridian the movements of the reflex are in the same direction as the mirror is rotated then the refraction in that meridian is hyperopic. But in the horizontal meridian, as the mirror is turned, we find that the retinal reflex moves in an opposite direction, this meridian must then be myopic, consequently we have the condition of refraction known as mixed astigmatism, due to hypermetropic refraction in the vertical meridian, and myopic in the horizontal.

Should the movements of this reflex be distinct either with or against the rotation of the mirror in any one meridian, as vertical or horizontal, and stationary in the meridian at right angles to that, then this meridian would be emmetropic, and we would have simple astigmatism—myopic or hyperopic—according to the movements of the reflex in each principal meridian, while if the astigmatism is at any other meridian on the arc of a circle than that of the vertical or the horizontal axis, it will be at once shown by the direction in which the retinal reflex moves without regard to the rotation of the mirror, at the same time showing the error of refraction.

We will not discuss the theory upon which these phenomena are based, nor will I enter upon the details of the estimation of the degree or amount of refractive error shown by this test, and for which we use the various trial glasses found in our cases—placing suitable glasses before each eye, until the movements of the retinal reflex are neutralized—in other words, so uncertain that they appear almost stationary, that subject would be beyond the scope of this paper, I simply offer this test, that you may diagnose with almost complete certainty, if it be necessary, that the examined eyes should be properly fitted and the error of refraction corrected, as a relief toward any eye-strain or reflex symptoms that may be present.

I would also state that this test may be practiced with the concave mirror, such as is found on the ophthalmoscope, but with this mirror we must remember that all the movements of the retinal reflex will be reversed, in other words, in myopia the movements will be with the rotation of the mirror and in hypermetropia they will be against or in the opposite direction. Nor would I suggest to you the use of the system most commonly employed in England, by which the refraction is first made myopic, placing a convex glass of forty inches, focal distance, before the eye to be examined and then using the mirror in the same way as I have advised. These methods make the examination much more complicated and difficult to understand, while I consider the use of the plane mirror more simple, more easy and more exact in its results.

F. Richardson Cross of London, England, says a method thus based upon sound optical principles, cannot but be of great practical value, and it has proved itself an easy, rapid and precise test in the hands of a large number of oculists. While Swan Burnett of Washington, in writing of this test, says, " It has been called a simple method of testing the refraction, and so it is, but simple as it is, it cannot be mastered without painstaking care as to the smaller details, and considerable experience is necessary before it can be executed with rapidity and certainty of which it is capable, and which are among its recommendations to the practitioner."

I shall take the liberty of giving you the histories of two cases taken from my note book, which will perhaps illustrate the necessity of all physicians being able to diagnose the errors of refraction.

Mr. L. S., age 67, was sent to me by Dr. Emil Henel for examination on June 18, 1889, he gave me this history: He is a builder of metallic boats, and while working in his shop some two months before I saw him, had an attack of vertigo, and since then constant pain and heaviness in the frontal region with a "fear of falling." He has worn glasses for reading only for the past ten years, but now after reading he "feels bad everywhere," with nausea, pain in the head and dizziness. He was carefully tested, and by retinoscopy the movements in the pupillary space were very distinct, being with the mirror both vertically and horizontally, showing a general hypermetropia of about one-fortieth or one dioptre. He was ordered to wear glasses of this strength constantly, and a stronger pair to be used when reading or using his eyes at the near point.

On Nov. 1, 1889, four months after his first visit he called on me again, and reported that having worn his glasses as directed he has had no return of vertigo, headache or other symptoms, in fact has been completely relieved, while if he leaves off the glasses, he will have the same unpleasant symptoms.

The second case, that may illustrate the necessity for the diagnosis of an error of refraction, is as follows: The daughter of Dr. L. M. Straight of Bradford, Pa., was brought to my office by her father, as she could not see well at school, but also as she had suffered severely with pains in the head extending backwards so that she was unable to attend her school duties; these headaches were intermittent occurring three or four times a week, and were not relieved by any therapeutic measures. On examination by the method of retinoscopy, the movements of the retinal reflex were in a distinctly opposite direction, but more so in one meridian than the other, showing a higher degree of myopia, as the vertical meridian was tested than in the horizontal, in other words, I found by this test that she had compound myopic astigmatism in each eye. She was then fully tested by the usual methods and found to have normal vision with the correcting glasses, which were ordered to be worn constantly.

Two months after she again came to the office, expressed herself as delighted with her vision, and tells me that since wearing the glasses she has had no return of pains in the head.

My assistant, Dr. D. H. Weisner, gave me the following notes this afternoon of a case under his care:

Nora R., age 11 years, 6 months, for the past two years has been troubled with lachrymation and pain in and over the eyes, and lately had been studying hard with all the symptoms aggravated.

On Feb. 8, was called to see her, and learned that she had been promoted at school and studying very hard. I found her suffering from a violent headache and pain in the back of head, with soreness and tenderness along the cervical vertebra as low down as the sixth, and has been vomiting incessantly. I ordered simple remedies and complete rest, and she was then examined by retinoscopy, showing a high degree (2 D) of simple hyperopic astigmatism, with the emmetropic meridian inclined towards the nose.

She was then ordered a strong solution of atropine, and the eyes were tested with trial glasses, which confirmed the examination by retinoscopy, and she was ordered convex cylindric glasses for constant use. Feb. 24.—She has returned to school and says her eyes are perfectly comfortable, no pain, and would not be without the glasses.

This method of retinoscopy was "first introduced to the profession from France, and since has been largely adopted by the English, being now very extensively used in all the ophthalmic hospitals in England, while it seems to have met with distinct disfavor by the Germans, one of their professors calling it the "lazy English method," and it is yet to be fully adopted by the Americans. Yet I consider it one of the simplest methods for the diagnosis of all the errors of refraction, and further when fully carried out in all its details is one of the most exact in the hands of the ophthalmologist.

I have used this method for several years and almost invariably have found it to agree with my examinations made under atropine with the trial glasses, and with the ophthalmoscope.

That it will ever take the place of the examination by the direct method in the estimation of the refraction or the trial by glasses I do not believe, but these methods require extensive apparatus, constant clinical work, and one must be an adept to make them serviceable, while by the method of retinoscopy any physician in a few minutes, and at almost no cost, can at least tell if there is an existing error of refraction in the examined eye.

Nor is it dependent upon any subjective statements, but is practically an objective method, with positive results, consequently can be used to tell the refractive condition of children, illiterate persons and those whose eyes are deficient in visual power (amblyopia).

I present this simple and costless instrument to my colleagues, begging them to try it in a spirit of candor, which made Biot say, "We must not shun the humblest contrivance, when they improve or supplement our medical senses."—(Seguin on the Thermoscope.)

What then will be the indications for the general practitioner to examine and decide the refractive condition of the eyes? I would advise first, that in all cases of headache it may be due to an error of refraction, that will be shown by retinoscopy, that in all cases of functional derangements we may suspect a strain or irritation of the accommodative power, and the eyes should be carefully examined; that we should also examine the power of co-ordination of the extrinsic muscles of the eyes, that any deficiency may be properly corrected.

In closing I would state that these suggestions are offered to you not as opthalmologists, or specialists, but as general practitioners who may wish to make a more complete examination of your patients. That the symptoms presented may or may not be due to the refractive condition of the eyes, and if such a result should be found that you may decide what further steps to take for the relief of your patient, either by stopping the use of the eyes or suggesting the use of suitable glasses.

ARTICLE II.

TYPHOID FEVER.*

By R. C. M. Page, M. D., Professor of General Medicine and Diseases of the Chest, New York Polyclinic, etc., etc.

Typhoid Fever is an acute febrile disease, that is contagious under certain conditions. It is invariably associated with lesion of intestinal and mesenteric glands, enlargement of the spleen, and muscular degeneration, and lasts usually about four weeks. It was first so named by Louis of Paris about 1840, on account of the stupor or delirium that is so commonly a symptom, but since many diseases are in this sense of a typhoid character, authors have at different times endeavored to give it a better name. The best of these, perhaps, is *enteric* fever, on account of the intestinal lesions, as was first suggested by Dr. George B. Wood of Philadelphia about 1855, and now generally used by the English. Among the Germans it is known as *abdominal typhus*. Other names are cesspool fever, gastric fever, autumnal fever, and the like.

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*Read before the Northwestern Medical and Surgical Society, New York City, April 16, 1890.

Etiology. Typhoid fever is caused by a specific poison, the germ of which is now known as the bacillus of Eberth. The poison is contained in the fecal discharges of patients suffering with the disease, but not in the fresh state. For this reason typhoid fever patients may be placed side by side in hospitals, or elsewhere, without danger of contagion, if requisite hygienic precautions are observed, such as the immediate removal and destruction or thorough disinfection of the stools. But the *dejecta* must first undergo outside the body some change, perhaps not yet thoroughly understood, before the specific poison becomes active. This change is specially favored in such localities as sewers, cesspools and the like. The chief vehicles of contagion are water, food and air, particularly water. The spontaneous origin of typhoid fever under certain conditions is yet a subject for dispute. But this mode of its production appears as yet to lack positive proof, however strong the circumstantial evidence may be in certain isolated cases. That a disease very much resembling typhoid fever in some of its symptoms may result from exposure to putrescent animal effluvia and other deleterious influences is well known, but apart from the specific typhoid fever poison, the characteristic intestinal lesions of that disease will be absent. In some cases it has been difficult or even impossible to trace the poison, and for that reason a spontaneous origin has been claimed for it. But the same may be said of scarlet fever or any other disease.

The typhoid germ is possessed of great vitality, as is not only well known, but has also been thoroughly proved in a series of very interesting experiments by Dr. T. M. Prudden of this city, in which it was found that the bacteria of typhoid fever lived even in ice for an indefinite period (Medical Record, March 26, 1887).

Typhoid fever attacks people usually between 15 and 30 years of age, and is rarely observed among those over 50, or during the first year of infancy. One attack *may* exempt the patient from the disease in future, but this is not the invariable rule by any means. This would appear to be due, in some cases at least, to the fact that not all the intestinal glands had been affected in the first attack, but some escaping became the seat of the disease in a subsequent attack or relapse. It occurs in all parts of the world and at any season of the year, but more particularly in temperate regions and during the autumn.

Anatomical Characters. Besides parenchymatous degeneration of various organs, hypostatic congestions, emaciation, subcutaneous ulcerations, thrombi, emboli and resultant infarctions that may occur, there remain for special consideration the intestinal lesions with more or less enlargement of mesenteric glands, the enlargement of the spleen, and the degeneration of muscular tissue, notably the heart.

The essential and invariable lesions of typhoid fever are the changes that are produced in *Peyer's glands* of the small intestines, especially in the neighborhood of the ileo-cœcal valve. These changes vary progressively from hyperalmia, through ulceration, to cicatrization.

During the first week there is more or less intestinal catarrh, especially about these glands, so that the latter become swollen and elevated, causing the agminated glands to resemble the so-called shaven-beard. This condition becomes more marked during the second week, and during the third week, unless resolution shall have taken place, as may happen in some mild cases, ulceration occurs. These ulcers, while they are found near the ileo-cœcal valve, where they sometimes attain a large size, may be scattered throughout the intestinal tract. In some cases perforation results giving rise to rapidly fatal peritonitis. During the fourth week, in favorable cases, cicatrization of these ulcers begins, and the process is continued until they heal, leaving a slightly depressed area varying in size and shape, and often devoid of mucous membrane. Enlargement of *mesenteric glands* is secondary to these intestinal lesions. Those near the ileo-cœcal valve especially are affected, and they become enlarged by absorption from the inflamed and ulcerated intestinal glands. At first they are congested and then inflamed, reaching their maximum size, walnut or hen's egg, about the third week, when they may be distinctly felt, especially in children who have become markedly emaciated. The inflammation here, as elsewhere, undergoes resolution, in favorable cases, and the glands return to their normal size and condition. In other cases they may undergo softening and entirely disappear by absorption, or, rupturing, they may cause peritonitis. Finally they may undergo caseous or calcareous degeneration.

The *spleen* is invariably congested and enlarged, sometimes two or three times its normal size, or even larger. It also becomes purplish-black in color, and so soft and friable in consistence that it readily breaks down under pressure, and sometimes ruptures.

The *heart*, with other striated muscular tissue throughout the body, undergoes more or less temporary granular, as well as waxy, degeneration. This important fact should always be borne in mind during the treatment of this disease, as it shows that cardiac depressants in general are contra-indicated *in toto,* or else are to be used with great caution.

Less important are changes occurring in other organs. The liver, for instance, does not appear to undergo marked changes, nor are they regular or invariable. Disturbance of hepatic function resulting in abnormal and insufficient biliary secretion is no doubt an important factor, but it is the result of a general impairment rather than any action of the typhoid fever poison on the liver itself. When any lesion of the liver exists it appears to be limited to the granular or fatty degeneration of some of the hepatic cells. According to Loomis and others there is frequently present catarrhal inflammation of the larynx and bronchi. There are no special lesions of the brain or nervous system in general.

SYMPTOMS. The symptoms are well known and need not be dwelt upon. After the period of incubation, which is variable and unknown, and the initial stage has begun, the symptoms vary with, and are often characteristic of, each week of the disease.

Pain and tenderness, especially under pressure in the right illiac fossa, may be noticed early, and continue throughout the attack. It is caused doubtless by the characteristic intestinal lesions.

The *temperature* of a typical case is characteristic. During the first week this gradually rises, the evening temperature being about 1° F. higher than it was in the morning, and 2° F. higher than on the previous evening, so that it reaches its maximum of 104° F., 105° F. by the end of the first week. During the second week the temperature remains at about what it was at the end of the first week, but more or less exacerbating and remitting, being about 1° F. higher in the evening than in the morning. During the third week it remits more noticeably, and in the fourth week it intermits, gradually becoming normal.

The *pulse* varies with the temperature, being more frequent, feeble and irregular during the second and third weeks than at any other period of the attack.

The *eruption* usually appears at the end of the first week, or during the second, and it remains throughout the attack. Often it requires a *very close search* to find these spots; in other cases they are abundant, and finally they may be absent altogether. They disappear under pressure, and in this respect differ from the maculae of typhus fever or hemorrhagic spots of purpura.

Diarrhœa usually comes on during the first week, and is catarrhal in character, depending on the condition of the intestinal mucous membrane and characterized by the well-known pea-soup stools. In some cases diarrhœa is entirely absent, there being constipation instead. Appearing later on in the disease, diarrhœa is a more serious symptom, depending, as it frequently then does, upon ulceration of Peyer's patches.

Hemorrhage may occur early in the disease and then is usually of slight importance, whether as a mild epistaxis or scarcely perceptible discharge from the bowels. But later on it is more significant and requires prompt attention. When during the third week hemorrhage from the bowels occurs it is probably due to ulcerative process. It happens, as such, about once in twenty cases, according to Loomis.

Tympanitis, caused by accumulation of gas in the large intestine, from more or less paralysis of the walls of the latter while the sphincter ani remains capable, usually begins during the second week and continues until convalescence is established. Various causes are assigned by different authors for tympanitis, but I believe the one already given by me is correct, and similar to retention of urine in a paralyzed bladder. Hence the rational indication of treatment by means of a catheter in both instances.

Delirium usually is first noticed during the second week and comes on at night. It continues usually throughout the disease, disappearing after a sound and refreshing sleep.

Insomnia, like delirium, may become a troublesome symptom, usually coming on about the second week. Its cause is not well understood, but it appears to be due to muscular degeneration of the heart and failure of the circulation rather than any change in the brain itself. The remarks in regard to delirium hold good for most cases of insomnia, and hence the rational indication for treatment in both cases.

The *tongue,* at first covered with a thin white coat, towards the second week becomes red at its sides and tip. The dorsal papillae become enlarged. By the second week the tongue has become brown and dry, and, with the lips, is often fissured. Sordes collect about the teeth, and towards the end herpes about the mouth.

Relapses sometimes occur after the patient has been thought to be out of danger and the physician has ceased his visits. These relapses are difficult to account for. Not infrequently they are perhaps due to imprudence in eating and drinking. But also it may be because all the Peyer's glands have not been affected during the first attack, but now become the seat of the disease. In this way one or more relapses might occur.

Prognosis. Death usually occurs about the third week and is generally due to exhaustion—failure of the organs to perform their functions and especially the heart. In other cases death is caused by complications, such as pneumonia, peritonitis from perforation or other cause, profuse hemorrhage, diarrhœa, suppression of urine, and the like. Under the ordinary expectant plan of treatment in the City of New York about 42 per cent. of cases, in round numbers, die. At such well regulated and cleanly institutions as the New York Hospital, about 24 per cent. of typhoid fever patients die under the same plan. Under the cold bath treatment, however, the death rate in this disease has, of late years, been markedly diminished.

Diagnosis. Unfortunately a great many diseases may, by neglect or unscientific treatment, assume the typhoid type so that mistake in the diagnosis of true typhoid, or enteric, fever is of every-day occurrence. Even in the course of an ordinary attack of lobar pneumonia the patient not infrequently sinks into a typhoid condition, so that to a stranger the symptoms of true typhoid fever at once are suggested. But typhoid pneumonia, so-called, is not typhoid fever and pneumonia combined, as is supposed to be the case by the laity and many practising physicians, but it is simply pneumonia with typhoid symptoms. Since, however, these two diseases often give rise to symptoms that are identical, they should be at once differentiated by the well-known physical signs, a very easy matter. Should pneumonia, however, occur during an attack of typhoid fever it is usually lobular and does not generally occur before the third week. It comes on very insidiously and will escape observation unless careful physical examination be made from time to time.

Malarial fever, not infrequently, very closely resembles typhoid fever after the first week of the disease. The early history then becomes of great importance. The sudden onset of malaria fever, the chill, epigastric pain, vomiting, and rending headache, and, above all, the marked difference between the morning and evening temperature would generally lead to a correct diagnosis. Lastly, in cases of doubt from any cause, a sample of blood obtained from the spleen by means of the hypodermic syringe, as was first suggested to me by Dr. G. L. Peabody of the New York Hospital several years ago, would be a certain means of setting the question beyond doubt by finding the bacillus of Eberth.

A long list of diseases might naturally be included under the head of diagnosis, but strict attention to the early history of the attack and the physical signs, including examination of the blood, if necessary, are usually sufficient.

Treatment. Here, as in tuberculosis, for instance, we have to deal with a disease which has for its cause a specific germ, for the removal of which no antidote has yet been discovered. The object of treatment, therefore, is not the application of any particular antidote to the poison, but rather to sustain life until the poison has been eliminated; including, of course, the treatment of certain urgent symptoms as they arise. For this reason the patient should be allowed an abundance of fresh air and an even temperature of about 65° F., 67° F. The utmost cleanliness should be observed to avoid bedsores for instance, and the stools should be at once removed and thoroughly disinfected or destroyed by fire or otherwise, in order to avoid the spread of the disease to others as well as relapses in the same individual. About four to six ounces of nutritious and easily assimilable diet, such as milk or beef tea, should be given about every three hours during the day.

The *temperature* naturally engages our attention, and should it rise to 103½° F., 105° F. it may become necessary to reduce it.

The methods for reducing temperature may be embraced under two heads, (1) the internal administration of drugs, (2) the application of cold by some means.

Of the drugs, usually given for this purpose, may be mentioned quinine, antipyrin, phenacetin and antifebrin, such depressing and dangerous remedies as veratrum, acconite and kairin being out of the question altogether.

Antipyrin, though very soluble and easily administered, has the disadvantage of being somewhat a cardiac depressant. For that reason I have usually given it in combination with digitalis or alcoholic stimulants.

Phenacetin and antifebrin are both resinous substances and rather insoluble, and, inasmuch as the latter is required in smaller doses, I generally prefer it. Three doses of the latter, each three grains, given at intervals of about two hours in the afternoon, are usually sufficient to reduce the temperature to about 102° F. for the evening.

A word as to quinine. Only a few years ago it was customary with some to give quinine, even in enormous doses, to reduce temperature, not only in typhoid fever, but in pneumonia and other diseases. In 1882, while visiting the general hospital at Hamburg, in North Germany, I learned that, even at that date, quinine, as an antipyretic in typhoid fever, had been abandoned there several years previously. The reasons for abandoning it as antipyretic were obvious. It did *not* appreciably reduce the temperature, but it *did* increase head symptoms, such as delirium, deafness, and such like nervous phenomena. That was before the discovery of antipyrin, and salicylic acid was regarded as too depressing for the heart, so that finally, for the reduction of the temperature as well as the general comfort of the patient and the avoidance of bed-sores, typhoid fever patients were placed upon *water beds*, supplied with two tubes leading to them provided with stop-cocks for hot and cold water, and an escape pipe at the foot of the bed. By these means the patient not only had a delightful bed, but the temperature could be regulated according to the requirements in each case. Since that plan had been adopted it was the rare exception for a typhoid fever patient to die, and even then it was usually confined to those who were brought to the hospital late in the course of the disease which had been overlooked, or badly treated before admission.

Fenwick's Apparatus, as used in the London Hospital, is a convenient method of reducing temperature by the application of cold. By means of buckets of ice suspended from the top rail of the crib, the temperature can be reduced to any degree required. And if reduction of temperature alone be required, Fenwick's apparatus would undoubtedly serve the purpose, and be a most effectual and convenient means for the treatment of typhoid fever.

The *ice-cap* simply might be used instead of Fenwick's apparatus as a means of reducing temperature. Heretofore they have been too small to be of much practical use, but those now made by the Goodyear Rubber Company may be obtained of any size or pattern. Not only does cold applied to the head often prove very agreeable to the patient and lessen headache, but it also reduces the temperature of the body. Indeed, Mr. Keith of London (formerly of Edinboro) applies cold to the patient's head instead of using the *coil* over the abdomen for the reduction of temperature after laparotomies. As to the choice between the ice-cap to the head and the coil over the abdomen for the reduction of temperature, the former is to be preferred as being equally, if not more, efficacious, as well as more convenient. Finally, we come to the use of baths in the treatment of typhoid fever.

The Germans, I believe, were the first to adopt this method of treatment. But at first, as supposed even now by some, it was intended to reduce the temperature only. In 1865, Brand, of Prussia, first systematized cold bathing in the treatment of typhoid fever, and it has been found that under this method the death rate has fallen from 40 and 50 per cent. down to 7 per cent. Indeed Brand now claims that where patients are treated properly and systematically by means of the cold bath during the first week of the disease, the death rate is only about 1 per cent.

Later, Ziemsen, of Munich, adopted the cold bath treatment. His details differ a little from those of Brand, who places patients in a bath at a temperature of 65 deg. F., and allows them to remain there from 15 to 20 minutes until a sense of chilliness is experienced and even chattering of the teeth may be observed. The patient is then taken out, thoroughly dried, and put to bed again. This is repeated about every three hours. Ziemsen places the patient in a bath about 2 deg. F. lower in temperature than that of the patient and then gradually reduces it by the addition of cold water until it falls to 68 deg F. The head, neck, and shoulders are meantime showered. After 15 to 25 minutes the patient is removed to bed as before stated. During the bath of either kind the temperature falls about 2 deg. F., nor is it well to bring it down lower.

The action of the bath is not, however, to bring down temperature simply. That object could be accomplished more readily and effectually by means already spoken of. But according to Leichtenstern, (Ziemsen Handbook of General Therapeutics, Vol. IV. p. 237, *et al*,) Ziemsen and others, as has been so forcibly brought forward by Dr. Baruch in several articles on this subject during the past Winter, the stimulating effect of cold water on the nerve peripheries of the whole body is reflected back to the nerve centres and from them to the various organs, especially the heart, causing them for the time being to perform their functions in a physiological way to a greater or less degree, according to the case. This reflex action through nerve centres produced by baths was set forth by me in a paper on Carlsbad, read before the Section in Practice, New York Academy of Medicine, Oct. 19, 1886. (New York Medical Record, Oct. 30, 1886, pp. 479-482.) The stimulating effect of the bath as used by Brand or Ziemsen lasted for about 3 hours, at the end of which time it was necessary to repeat them. It is always well to have cardiac stimulants, as brandy or whiskey, and the like, ready in case signs of heart failure, during the fall of temperature, might occur. Not only is temperature reduced by these baths, but from the reflex nervous action, the heart beats stronger and more regularly, digestion is improved, flatulency is lessened, delirium disappears for the time, and there is a general amelioration of the patient's condition. In private practice, the wet sheet I have sometimes found to be sufficiently efficacious besides being much more conveniently applied, as I found first in case of consultation with Dr. G. T. Harrison of this city several years ago. But the principle is the same. Fold a blanket the width and length of the patient, allowing margin sufficient not to wet the bed. Place it by the side of the patient. Now wring a sheet out of water at the ordinary temperature of the room, and fold it. Place it on the blanket and, having stripped the patient, roll him over on the sheet. Now wrap the sheet about him. After about 5 minutes place him on another wet sheet. After repeating this operation about three times wipe the patient dry and put him to bed as when using the bath. Have cardiac stimulants ready as before mentioned. Repeat the wet pack about every 3 hours as in the case of the bath. Rolling the patient over and shifting him about in this procedure is of great benefit in preventing hypostatic pneumonia, which is so liable to occur in this disease from the patient remaining in the same position too long.

Diarrhœa in the early stage need not be always interfered with, but should it occur later on or exhaust the patient at any stage, efforts should be made to check it at once. The best remedy I have ever tried is bismuth and morphine. (℞ Bismuth Subnitrate ʒ i; Morphia Sulphate gr. i; ♏ ft. cht. no. vj.; Sig. one ter die *p. r. n.*) In fact if that remedy fails I know of no other that would be likely to succeed, though the various astringents might be tried.

Hemorrhage, like diarrhœa, need not be checked unless sufficient to cause alarm. It may become necessary to plug the nares in case of obstinate and profuse epistaxis. I have usually found that plugging the *anterior* nares is sufficient, but it might be also necessary to plug the posterior nares by the well known method. For intestinal hemorrhage, whether it be due to ulceration or other cause, opium and ergot are the best remedies. Five to ten minims of Magendie's Solution of Morphine, and one to three grains of Ergotine may be given hypodermically. There is no use to give these remedies by the mouth since they not only help to up set the stomach but are also too slow of digestion in order to be of immediate service. Hence they should be administered hypodermically, and repeated if necessary. If this means does not check hemorrhage, I know of nothing else that will, though other remedies might be tried. There is little use in giving the patient the so-called astringents. Given in a quantity sufficient to arrive at the point of ulceration, they would cause vomiting or other signs of poisoning, and hence are worthless. Of the remedies for checking internal hemorrhage, opium is to be preferred. How does it act? By quieting peristalsis and nervousness and by rest, allowing a clot to form. Ice applied externally is of doubtful efficacy. Given by the mouth, it is probably useless. In either case it might be of benefit by lowering temperature and thus slowing cardiac action.

Tympanitis being due to gas confined by a sphincter in a powerless bowel should be relieved by letting off the gas by means of a catheter, just as urine should be drawn from a paralysed bladder. I have never seen any good result from the use of turpentine or other remedies given internally or applied externally for this symptom.

Delirium is best controlled by the moderate use of alcoholic stimulants. This method of treatment should be commenced as soon as delirium occurs, as a rule, and the tongue becomes brown and dry. About a tablespoonful of brandy or whiskey, in a little milk every 2 or 3 hours, is usually enough.

Insomnia may be relieved by small doses of morphia given in the afternoon rather than at bed time, for the first effects of morphia are often so stimulating as to keep the patient awake. Urethan, in doses of 5 to 20 grains, is sometimes an excellent remedy. I have had no experience as yet with sulphonal, hypnone and other hypnotics in these cases.

Finally, what I have often found to be of the greatest comfort to the patient is a little glycerine applied to the dried tongue. It keeps it moist and clean.

Complications should be treated as they arise.

31 W. 33d Street, New York, April 16, 1890.

ORIGINAL ABSTRACTS.

By Kirkland Ruffin, M. D., Norfolk, Va.

Hypnotism as an Anæsthetic.—*From the British Medical Journal.*

On March 28th a number of leading medical men and dental surgeons of Leeds and district assembled to witness a series of surgical and dental operations performed under hypnotic influence, induced by Dr. Milne Bramwell of Goole, Yorkshire. About sixty were present. The object of the meeting was to show the power of hypnotism to produce absolute anæsthesia in painful and severe operations.

The first patient was a woman, aged 25. She was hypnotized at a word by Dr. Bramwell, and told to submit to three teeth being extracted by Mr. Carter, and to do anything he asked her to do. This was entirely successful. There was no expression of pain on the face, no cry, and no pain in the gums when she awoke, nor had she felt the operation.

The next patient was a servant girl, aged 19, on whom a fortnight before Mr. Hewetson had opened and freely scraped a large lachrymal abscess without knowledge or pain while she was under the hypnotic influence induced by Dr. Bramwell. Subsequent dressings were made under hypnotic anæsthesia, the "healing suggestions" being daily given to the patient, and the place healed in ten days—a remarkably short time in a girl affected by syphilis and in rather poor health. She was put to sleep by the following letter:

BURLINGTON CRESCENT, GOOLE, YORKSHIRE.

DEAR MR. TURNER: I send you a patient with enclosed order. When you give it her she will fall asleep at once, and obey your commands. J. MILNE BRAMWELL.

ORDER.—Go to sleep at once, by order of Dr. Bramwell, and obey Mr. Turner's commands. J. MILNE BRAMWELL.

Sleep was induced at once by reading the note, and was so profound that when she awoke after the removal of sixteen stumps she insisted she had felt no pain, and that there was no pain in her mouth. During the whole time she did everything Mr. Turner suggested, and there was a diminished flow of saliva, with absence of corneal reflexes, and more noisy breathing than natural, and a slower pulse.

The next patient was a boy, aged 8. Dr. Bramwell stated that he was a severe test because he was so young, and because he had not attempted to produce hypnotic anæsthesia until two days before. He explained that patients require training for this form of anæsthesia. The patient was sufficiently hypnotized to allow Mr. Mayo Robson to remove a bony growth and part of the first phalanx of the great toe, with no more than a few cries towards the close of the operation. When he awoke he appeared to know very little of what had been done. It was necessary in this case for Dr. Bramwell to repeat the hypnotic suggestions.

The next patient was a highly sensitive girl of 15. Mr. Hewetson removed both tonsils with ease, the patient being in a state of perfect anæsthesia, and yet obeying every request of the operator at the suggestion of the hypnotizer.

From another patient, who had been hypnotized, two teeth were extracted with equal success. Then Dr. Bramwell stated that he had cured this man of drunkenness by hypnotic suggestion, and to prove it he hypnotized the man and then told him that a glass of water which he showed him was "bad beer." He then told him to awake and offered him the glass of water. He tasted it, but immediately spat out the "offensive liquid."

Mr. T. I. Carter next extracted a very difficult stump from another man under hypnotic anæsthesia as successfully as in the previous case. Dr. Bramwell stated that he had cured this man of facial neuralgia by hypnotism, and had also given him refreshing hypnotic sleep either through a note or a telegram.

At the conclusion of these experiments a unanimous vote of thanks was given Dr. Bramwell. Mr. Pridgin Teale said: "I feel sure that the time has now come when we shall have to recognize hypnotism as a necessary part of our study."

NOTES ON THE INFECTIOUS NATURE OF ACUTE LOBAR PNEUMONIA. By Charles W. Townsend, M. D.—*From the Boston Medical and Surgical Journal.*

The author thinks that most authorities consider acute lobar pneumonia to be an acute infectious disease, although not contagious or directly communicable from patient to patient. The uniformity in the symptoms and course of this self-limited disease, the fact that several cases of pneumonia frequently occur in the same locality render circumstances which would lead one to suppose a local cause. Some ninety examples of these local epidemics may be found in medical literature since the year 1863. The investigations of Friedlander, Talamon and others on the causative germ need not be referred to.

Out of a total of 643 cases of pneumonia in the North, Central, and West End dispensary districts of Boston, recorded in their books from 1882 to July 1, 1888, 487 occurred in separate houses, while 156 occurred two or more in the same house, including 13 cases occurring in adjacent houses in small courts, as follows:

Seven cases in one court in one instance, five cases in one house in one instance, four cases in one house in four instances, three cases in one house in fourteen instances, two cases in one house in forty-three instances.

Of the seven cases which occurred in one court, two were within five months in neigboring houses, a year later two more cases within a month in neighboring houses, and in one of these houses three other cases occurred at intervals of two, four and five months. Of the five cases in one court, three were within fourteen months, and two years later two occurred at the same time. In one house two cases occurred at the same time in 1886, one case two years before and one two years after this. In another, two cases occurred at the same time and one a year before and another a year after. In another house, in a more filthy condition, two cases occurred in three months in 1886, two others in two months in 1888.

Of course other cases may have occurred besides those recorded by the dispensary physicians.

In eleven instances two cases of pneumonia occurred at the same time in the same house, and in one instance three cases occurred at the same time, and three others about the same time in two neighboring houses. It would be safe to say that all the houses in which two or more cases of pneumonia occurred showed some sanitary defect, due either to bad construction, bad drainage or filth.

Although many of these cases may be simply coincidences, still it may fairly be said that some, at least, bear out the idea of the infectious nature of acute lobar pneumonia, and the conclusion may be drawn that its propagation is favored by unsanitary conditions.

THE ULTIMATE RESULTS OF LAPAROTOMY FOR THE REMOVAL OF DISEASED APPENDAGES. By H. C. Coe, M. D.—*From the Medical Record.*

The author limited his discussion to the condition of his patients one, two, or five years after operation. He considers a dispensary physician in a better position to judge of the after effects of laparotomy than the distinguished surgeon whose interest in the patient often ends with her dismissal from the hospital. By "ultimate results" of laparotomy, he means the condition of the patient after the lapse of a year, by which time the symptoms due to a sudden and artificial establishment of the menopause ought to have disappeared or become bearable. This excludes certain secondary complications, such as acute pelvic abscess, intestinal and vesico-vaginal fistula, fistulous drainage-tubs tracts, mural abscess, ventral hernia, etc. While assuming that the most gratifying results follow laparotomy, as regards not only preservation of life, but also restoration from invalidism to perfect health, the author confined himself to the permanent ill-effects which may follow even the simplest and least complicated operation.

For convenience these ill effects may be considered under two heads: 1, Psychical results; 2, physical results. Under the first head should not be included transient "psychoses" but actually insanity. The estimates of permanent insanity as a result of laparatomy vary widely, and one gentleman stated that it was even as high as ten per cent. The physical results of laparatomy for the removal of adnexa may be general or local. Among its former are disturbances of the circulation which may last for years and various viscular disturbances, especially intestinal troubles, due to adhesions. All who have performed laparatomy a second time on the same patient will agree as to the frequency of localized peritonitis in apparently aseptic cases. Peritonitis means adhesion. Among the local or intra-pelvic complications following laparatomy are persistent pelvic pain, congestion of the uterus (with or without pseudo-menstruations) vesical or intestinal disturbances, all of which may last for years and are directly due to adhesions or indurations. If adhesions existed before the operation and are separated at the time, they are very apt to reform. Small indurations around the stump or in the broad ligaments may cause constant severe pains. Intestinal adhesions are of common occurrence, and when slight may give rise to constant colicky pains, and when more extensive the patient is in constant danger of intestinal obstructions. When diseased adnexa—a pyosalpinx abscess, or adhesive cyst—is emptied and fastened in an unnatural position, as in the abdominal wound, even if the intestines do not become adherent, undue traction is made on the pelvic organs giving rise to permanent distressing symptoms. In spite of all precautions intra-pelvic adhesions take place, and that too in uncomplicated cases in which there were no adhesions in the time of operation. Localized peritonitis may develop in any given case, however favorable it may be. The following are brief notes from the author's own cases, which he has kept under observation since the operation.

Case I.—Mrs. W——. Laparotomy, Oct., '85. Double intraligamentous cyst with pyosalpinx. General intestinal adhesions. Cyst of right side enucleated and removed with tube. Left tube removed and cyst drained and stitched in wound. Good recovery. Patient still under treatment for persistent pain and dysmenorrhœa. Until recently there was frequent micturition. Some vesical tenesmus. The uterus is drawn up and adherent to the left side of the pelvis. Treatment gives only temporary relief.

Case II.—Mrs. D——. Gonorrhoeal salpingitis, uterus retroflexed and firmly adherent, constant pain and severe dysmenorrhœa. Treatment for over a year gave no relief. Laparotomy, Sept., '87. Adhesions broken up, appendages removed, ventro-fixation of uterus. Convalescence rapid. Relief lasted several months, then pain returned as before.

Case III.—Miss L——. Tubes and ovaries removed in '85 for the relief of dysmenorrhœa. Convalescence normal. Menstruation ceased but there was persistent pain which could not be relieved. Indurations on right side. Constant and agonizing vesical tenesmus. Constant cerebal hyperæmia. A second operation was performed and the induration found but could not be removed, and terminated fatally. At the autopsy the induration was discovered at the site of the right stump which pressed on the ureter, causing pyonephrosis of the right kidney.

Case IV.—Double pyosalpinx and chronic oöphoritis. Laparotomy Oct. '88. Rapid convalescence. Both ovaries removed. Still menstruates regularly with more pain than before the operation. Her condition is worse than before.

Case V.—Mrs. T——. Under treatment for a year but grew worse. Both ovaries adherent in Douglass' pouch and very tender. Constant pelvic pains, severe dysmenorrhoea and menorrhagia Laparotomy, Dec. '89. Diseased tubes and ovaries removed. Rapid recovery. Still has the same pains as before, and has a constant sanguinous discharge but does not menstruate.

The author gives the history of three more cases; in one the symptoms after laparotomy was done twice, were worse than before the operation, and in the other two there were still pain and induration.

The author regrets the singular reticence of surgeons with regards to the ultimate results of their operations. The author insists on the truth which he has often demonstrated in the examination-room, at the operating table, and in the dead-room—that recovery from laparotomy is *not* synonymous with cure.

THE QUESTION OF OPERATIONS UPON FISTULA IN PHTHISIS. By H. W. Allingham, F. R. C. S. Read before the Medical Society of London, March 3, 1890.—*From the British Medical Journal.*

As a rule the literature on this subject is very meagre and contradictory; one author stating that an operation is advisable, another warning against it. Dr. Theodore Williams in his book speaks of the frequent alternations between the four disharges from the fistula and the activity of the phthisis. Dr. Douglas Powell in his work on Diseases of the Lungs says that fistulæ-in-ano occur in something less than five per cent. of cases of phthisis, and is almost limited to males, and that amongst those afflicted with fistula, phthisis commonly supervenes or already exists. He also states (1) that fistula may arise from various causes with no necessary connection with tubercle, but that, having become chronic, it is very apt to become tubercular and then lead to secondary tubercle in other organs, especially the lungs, and hence a timely operation may prevent the secondary deposit, (2) that fistula more commonly occurs in cases of phthisis when the cachexia of that disease is already marked; and, if not tubercular at first, it rapidly becomes so, and should not be operated on unless it cause much suffering.

Dr. J. E. Pollock in his book on Phthisis says that in his experience the operation is not usually successful, or, if successful for a while, the fistula generally returns and that the phthisical symptoms are always worse after the healing of the sinuses. Dr. Fuller in his book on Diseases of the Chest says that operation is not advisable when the discharge from the fistula is small and the symptoms insignificant, for the phthisis would be made worse, but if the discharge is considerable he has seen good results follow operation and the administration of tonics.

The author thinks some fairly definite rule should be laid down for the treatment of these cases; now, the advice given as to operation, or not, depends almost entirely upon whether the patient consults a surgeon or a physician.

Fistula in a healthy patient is equally common in the two sexes, the buttocks are plump, and the ischio-rectal fossæ filled with fat, the sphincters are strong, the fistula begins with an accute abscess with great pain and the external opening is small and pouting and the skin around it is healthy, the internal opening is very small and the sinuses are hard and indurated and discharge thick pus. Fistula in phthisis is most common in the male, the buttocks are thin and there is lack of fat in the ischio-rectal fossæ, the sphincters are weak, the fistula begins with a chronic abscess and little pain, the external opening is large and ragged and the skin around it is blue and unhealthy, the internal opening is large, easily admitting the finger, the sinuses are soft and the discharge thin and watery.

Fistula in phthisis may be classed under three heads:

I. Fistula in conjunction with active tuberculosis. II. Fistula in conjunction with chronic phthisis. III. "Strumous fistula" which answers to "scrofulous phthisis."

I. These patients probably have only a short time to live. The fistula commences with a tubercular ulcer of the rectum and develops into a blind internal fistula with a large external opening, which allows the entrance of fæces giving rise to great pain. Cure is not to be aimed at, but an incision from outside into the cavity of the fistula allows the escape of the fæces and gives great relief from pain.

II. These patients still have the remains of a cavity or consolidation at the apices of the lungs. The fistula begins in the bowel or just at the entrance of the anus and burrows outward, undermining the skin. Both orifices are large and the skin unhealthy. To give the lung a chance to recover, the discharge of the fistula should be cured and the drain on the system stopped. The sinus should be laid open and well scraped, the external sphincter being spared as much as possible, and the unhealthy skin removed.

III. These patients belong to phthisical families but have no other evidence of phthisis themselves. The fistula begins with a chronic abscess and may, or may not, have an internal opening. This form of fistula should be promptly attacked, for, if allowed to remain, it may become the focus for the spread of active tuberculosis. The operation is the same as for any traumatic fistula.

If operation has been decided on, the patient should be removed to some favorable place and his cough, if he has one, should be allayed, for otherwise the straining would interfere with healing. Chloroform is to be preferred to ether, for it produces less irritation of the lungs and less cough. The patient should be allowed to get up as early as possible—even on the next day—or at least should not be kept strictly on his back. No more local treatment of the wounds should be done than is absolutely necessary. Dry dressings are preferable. The author insists on the great importance of the physican and surgeon seeing the patient together and making a thorough examination from both standpoints and then deciding the advisability of operation. The mental effect of telling a phthisical patient that his fistula must not be operated on or cured, and the resulting depression must also be considered.

The President, Dr. Theodore Williams, said that the discharge, if not large in amount, often proved beneficial so far as the lung symptoms were concerned, and he mentioned cases in which when one improved the other grew worse. He thought the patient's chances were measured by the extent that other organs than the lungs were involved. Yet he would advise operation if the fistula gave much trouble, but would predict a probable increase of lung symptoms.

Mr. Marmaduke Sheild pointed out that fistula in phthisical subjects was usually associated with tuberculous patches higher up the rectum. Healing could not take place unless careful attention be paid to scraping the surfaces. He insisted on the value of iodoform in these cases. The rapid change for the worse following operation was due to systemic infection from bringing raw surfaces in contact with tubercular matter.

Mr. Harrison Cripps had accertained that about 15 per cent. of cases of fistula occurred in phthisical patients. It might be due either to a morbid tendency, to suppuration, or to previous ulceration. Great relief might sometimes be given by opening up the external orifice. Sometimes, he thought, the fever and other symptoms following operation might be due to tension. He much preferred chloroform to ether in these cases.

Dr. John Lowe advised immediate ligation of fistula when not too large, but generally he had hesitated to operate in these cases.

Mr. Taylor said that only from one to four per cent. of the in-patients at the Brompton Hospital had fistula, and that it usually gave very little trouble. If he should decide to operate he would not fear an increase of lung trouble, for that is often improved by the removal of diseased joints, etc. He thought, if the discharge were beneficial, we should use setons. He had found some fistulæ tubercular, but not all. He had never seen a case in which fistula started from a tubercular ulcer of the rectum.

On March 5, 1890, Dr. G. E. Herman read before the Obstetrical Society of London a paper on "The Change in Size of the Chest and Abdomen during the Lying-in Period, and the Effect of the Binder upon Them." He said that the three reasons generally given for the use of the binder are: 1. That it gave comfort; 2. That it counteracted the injurious effect of the sudden lowering of the intra-abdominal pressure; 3. That it preserved the "figure" of the patient. He gave measurements taken at the General Lying-in Hospital, which showed that without the binder the circumference of the lower part of the chest diminished about an inch in the first ten days. The diminution was practically the same in primipara and multipara. The effect of the binder was determined by comparing different classes of patients: (1) With binder as ordinarily applied; (2) without a binder; (3) with a very tight binder. The diminution was practically the same in each class. He concluded that the sole utility of the binder as ordinarily applied was as a means of comfort to the patient. Dr. Gervis thought that, if a belt were adjusted at the beginning of labor, and tightened from time to time during its progress, it promoted uterine action and lessened any tendency to subsequent hemorrhage.

Dr. Champneys said that the non-use of the binder sometimes led to the "pendulous belly," and he thought English hospital patients recovered with better figures than German women, who do not use the binder, and patients who had tried both preferred to use it. He thought it promoted the involution of the soft parts, but did not prevent flooding. Dr. Braxton Hicks thought that if the thorax were brought to its natural size by a slight bandage it would lessen the danger of hemorrhage. Dr. Herman, in reply, said that his remarks did not apply to the abdominal bandage as an adjuvant to labor. He thought the pendulous belly of the German women due to their earlier discharge from the hospital. He thought the wishes of the patient should determine the use, or not, of the binder.

SELECTIONS.

Sterility of Women. By James Oliver, M.D.,F.R.S. (Edin.), Assistant Physician to the Hospital for Women, London.

> "*The birth of organized beings,*" *says Cuvier,* "*is the greatest mystery of the organic economy, and of all nature; we see them develop, but we never see them form.*"

Every phenomenon which occurs in nature is the result of some pre-existing influence; this influence, it is agreed, we shall designate as cause, whilst the occurrence itself is called the effect.

Nothing is ever accomplished by a sudden act of transition. The workings of nature are never executed by fits and starts, although they very frequently appear to be suddenly affected. Interdependence is and must ever be avowedly maintained, otherwise a state bordering on chaos would ere long reign supreme. In the animal kingdom especially we witness this affinity and correlation, an affinity and correlation which is manifested and asserted whether the end attained be likely to prove beneficial to or exert a prejudicial influence on the species. Throughout the whole organic world change is wont to be gradual. The process of generation manifests this phenomenon; between that state favoring the production of a numerous offspring and that culminating in a complete sterility, there exists no distinct line of demarcation, so gradually in fact do the two states glide into each other, that we are wholly unable to say where the one ends and the other begins. In the animal and vegetable kingdoms, therefore, we may and actually do encounter every degree of fertility.

It is, strictly speaking, impossible to offer any intelligible and at the same time comprehensive definition of the term sterility. As a rule, a woman is said to be sterile when living under conditions, and at a time, favorable for reproduction, she fails to bring forth a living and viable child. In so far as the political economist is concerned, the definition may be considered replete; it is not, however, sufficiently comprehensive to satisfy the medical philosopher; a satisfactory definition is in fact impossible, I shall not therefore attempt an exposition.

The reproductive function, no matter how fulfilled, is wrapt in obscurity, and full of the greatest complexity. From a scientific point of view, it teems with questions of the deepest interest.

In the case of the many lower forms of animal life the germinal mass, composed of many germinal elements, and set apart from the perpetuation of the species for a more or less indefinite length of time, is acted on once and only once by the male element. Under such circumstanccs, the sperm element acts as a ferment, and possessing, as it would appear, latent power, it is capable of influencing the whole generative mass in the female. This is in fact a revelation of the old adage, "a little leaven leaveneth the whole lump."

Owen, in speaking of the mode of generation in the Aphides or plant lice, says—"The impregnated ova of the Aphis are deposited at the close of summer in the axils of the leaves, either of the plant infested by the species or of some neighboring plant, and the ova retaining their latent life through the winter, are hatched by the returning warmth of spring; a wingless hexapod larva is the result of the development. This larva, if circumstances such as warmth and food be favorable, will produce a brood and indeed a succession of broods of eight larvæ like itself, without any connection with the male. In fact, no winged males at this season have appeared. If the virgin progeny be also kept from any access to the male, each will produce a brood of the same number of aphides; and carefully prosecuted experiments have shown that this procreation from a virgin mother will continue to the seventh, the ninth, or the eleventh generation before the spermatic virtue of the ancestral coitus has been exhausted."[1] This interpolation may seem irrelevant to the subject in hand. I hope, however, to unearth its bearings, for analogous phenomena are witnessed in man and the higher animals, although the process of parthenogenesis is not displayed. The celebrated traveller Strzelecki has incidently drawn attention to the fact that the native women of America and Oceanica, after cohabiting with the white race, prove sterile with the men of their own race, though they are still capable of being impregnated by white men. The strange phenomenon must be due to some spermatic virtue which has permeated not only the generative glands, but probably to the whole constitution of the woman, whereby the ova for ever afterwards shed are so altered that they will not commingle and be acted upon by any sperm element derived from males of the same race. There has in fact been engendered, in consequence of coition with the white man, a native sexual incompatibility resulting in sterility. Witness to the mysterious influence of the first fruitful coitus in the progeny resulting from an immediately succeeding sexual congress. Quoting from Lord Morton, Darwin says[1]—"A nearly purely-bred, Arabian, chestnut mare bore a hybrid to a quagga; she was subsequently sent to Sir Gore Ousley, and produced two colts by a black Arabian horse. These two colts were partially dun-colored, and were striped on the legs more plainly than the real hybrid or even than the quagga. One of the two colts had the neck and some other parts of the body plainly marked with stripes. Stripes on the body, not to mention those on the legs, and the dun-color are extremely rare—I speak after having long attended to the subject—with horses of all kinds in Europe, and are unknown in the case of Arabians. But what makes the case still more striking is that the hair of the mane in these colts resemble that of the quagga, being short, stiff, and upright. Hence there can be no doubt that the quagga affected the character of the offspring subsequently begot by the black Arabian horse." The effect of a single coitus may in many cases exert for a long time afterwards some influence on the progeny.

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[1] Owen, "On Parthenogensis," 1849, p. 23.

Lack of observation is the bane of all progress in medicine. In order, however, that we may be unable to frame as far as possible an intelligible exposition of the multifarious influences at work tending to induce sterility, let us approach the whole subject, and attempt to elucidate revealed facts with a mind free from bias.

In man and the majority of animals perpetuation of the species is maintained by a process of gamogenesis, by the coalition and further segmentation of the germinal elements produced by two sexually distinct individuals. It is this participation in the act of generation by two parents which increases prodigiously our difficulty in investigating and explaining those causes which, constantly at work and liable to the greatest variation, act and react directly and indirectly, not only on the reproductive organs, but on the whole constitution of the male and female organism. The fault casual of sterility may therefore be assignable to one individual or to the other, or it may even be to both.

In the case of man, the female plays the most important part in the process of generation. She not only produces a germinal element, but she must retain and nourish in her body the impregnated mass for a more or less definite length of time, until, in fact, the resultant shall have reached that state of developmental perfection

[1] Darwin, "Plants and Animals under Domestication," 1868, vol. i. pp. 403, 404

enabling it to maintain an independent existence. With the male, on the other hand, all interest actually ceases with the emission of the sperm element. An inquiry, therefore, into the causes of sterility must not deal merely with those glands concerned in the production of germinal elements, and with the relative affinity of the germ and sperm elements for each other, but treat also of those constitutional conditions which directly or indirectly intefere with the functions of the whole reproductive tract, even although these disturbances merely impair the fulfillment of its requirements.

"The sterility of man," says Duncan, "as compared with that of woman, is a simple matter."[1] The term simply is only used here relatively, for science as yet has taught as but little regarding those conditions which, resident in or acting on the male, tend to render him sterile. The semen may be subjected to the most careful chemical and microscopical examination, and still we may be unable to express any opinion regarding the actual cause of sterility in any given case. Aspermatism and azoospermism may be detected, but incompatibility cannot be determined. We cannot recognize this latter quality, neither can we define its character,—it is a quality which cannot be investigated by any known process. The fault may be, and is no doubt due occasionally to an inability on the part of the male to deposit the semen properly. A proper disposition of semen is not altogether essential, for women have conceived without penetration having been effected.

On the other hand, "in woman," says Duncan, and with this I entirely agree, "the coordinate substances and functions are hidden and much more complex" than in man.

We cannot effectually treat of sterility in woman without first of all drawing attention to its existence and its probable amount in man. This is the more needful when we remember that the female plays the all important part in the production of offspring, a fact which it would appear has led many authors to ignore the existence in man of a disposition to sterility, and has led them to attribute the cause of failure in the sexual congress to become fruitful to some influence at work on the part of the woman. Gynæcologists have been readily entangled by this snare. In many cases they egregiously err, for they must needs detect some structural change in the organs of generation in almost every female who, because she has legitimately indulged in sexual intercourse for years, has never become pregnant. This promulgation is the result of defective observation, for, as a rule, the alleged alteration in structure has no other than a fanciful existence in the mind of the superficial observer himself. A semblance of brilliant results obtained by a too meddlesome interference may be paraded, but careful observation teaches us that the good which follows is invariably the outcome of an enforced sexual rest.

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[1] Duncan, On "Sterility in Woman," 1884, p. 1.

In order that any organ of the body may continue to perform its functions healthily, time must be allowed for the structure to regain its vigor after each period of activity. If this rest be denied, the function must necessarily become impaired, and the structure itself may eventually undergo change in consequence of a maintained vascular turgescence. Speaking of plants, Ward has drawn attention to the fact that all plants require rest : in some countries this is obtained by the rigour of Winter, in others by the scorching heat of Summer. Cultivators no doubt frequently fail in their attempts to grow certain plants because of a want of attention to this all-important point, namely, rest. Some plants, it is true, will grow and flourish under almost any circumstances ; all are not alike tender and difficult to rear. This same tendency is displayed by man and higher animals. Some women apparently conceive under the most disadvantageous circumstances, whilst others require the most careful guidance to bring about this much wished for result.

Table of Thirteen Women who have been Married more than once, and whose Age at last Marriage was within the range of Child-bearing.

Present Age.	Years Married to First Husband.	Children by First Husband.	Years Married to Second Husband.	Children by Second Husband.	Years Married to Third Husband.	Children by Third Husband.
52	4	2	23	0		
45	10	0	15	0		
30	7	4	3	0		
43	9	0	13	0		
38	6	0	6	2		
37	10	5	5	1		
47	1	1	23	0		
47	5	0	7	0	7	0
53	16	4	12	0		
34	5	3	7	1		
42	7	0	10	0		
33	3	1	5	0		
47	9	5	14	2		

Gross, in his work on *Male Sterility*, affirms that one male out of every six is sterile. He records 192 cases in which both the husband and wife were examined, and out of this number he found the male at fault thirty-three times. Thirty-one, it is alleged, suffered from azoospermism and two from aspermatism. Physical examination is open to error. The probable amount of sterility attributable to man, it appears to me, is more likely to be set forth by a careful scrutiny of cases in which a woman is betrothed to more than one husband. To aid in this determination, I have tabulated thirteen such cases which very recently have come under my own observation. The necessary facts are detailed, and I shall, as far as experience will enable me, eliminate every possible source of error.

Twenty-seven males are necessarily to be dealt with in the above table. Of this number, fifteen had produced no children; three of these had been betrothed to the same woman, and as all three had failed to impregnate, it is more than probable that the fault causal of sterility is justifiably assignable to the woman. Three women, again, had each possessed two husbands—six amongst them—and as all three had never been pregnant, it is, to a certain extent, allowable to conclude that the inability to conceive was due to some error or errors on the part of the female. The foregoing disposes of nine males out of the fifteen, leaving us still six to account for. Of the six, four were in all probability sterile, whilst the incapability of the remaining two may be doubted, as they can with some feasibility be otherwise explained. In one case, the woman had only lived with her first husband twelve months, and had by this marriage given birth to her first and only child. In my out-patient practice at the Hospital for Women, I have often remarked to my clinicals that conception, either prior to or immediately after marriage, lends materially to a disposition on the part of the woman to one child fertility. I am quite aware that many women, when they have become impressed with the fact that they are prone to conceive, and dreading the possibility of being the mothers of large families, adopt—after the birth of a first child within twelve months after marriage—precautions to prevent further risk of impregnation. I may here add that a woman who brings forth her first-born child either before or very soon after wedlock, is much more likely to be for a long time, or even for ever afterwards, sterile, than a woman whose life in this respect has been free from censure. The generative glands are highly sensitive and readily disturbed by mental states, and there can be no doubt that it is through the agency of the mind that in such cases one child fertility results. It is well to remember, however, that a like degree of sensitiveness of the reproductive glands is not manifested by all women. We know well how prone the whole structure of the organism is to be effected by emotional excitement; the secretion of the stomach is thereby readily arrested, so also the secretion of the skin, whilst the heart and other vascular structures are in like manner disturbed. The involuntary movements of the heart are effected by close attention to them. Attention directed for a long period on any one organ or function will undoubtedly affect eventually its vascularity and nutrition. And now to return to our subject, we have still to exculpate one male in the above table. In this case, the woman having already borne four children, was, for the second time, married at the age of forty-one, and if not already past, was at least bordering on the close of the child bearing epoch. Women do occasionally bear children after the age of forty; they are however the exception, and in the above case we cannot do otherwise than give the husband the benefit of the position. The above short series of cases, after allowing for all possible sources of error, teaches us that four males at least out of a total of twenty-seven were sterile, or one male out of every 6·7. This computation corresponds closely with that of Gross; still I am confident it is underestimated.

In the human race there are many factors at work, not only in the social life, but also in the habits of the individual, which thwart us in our endeavors to elucidate questions bearing on the reproductive process. Our chief and reliable information regarding those many causes which tend to induce a sterile state must be obtained from facts afforded us by the whole organic world, vegetal as well as animal. All sources of error must as far as possible be eliminated. In the case of man this is no easy task. For the picking up of superficial facts no intellectual training is requisite—a dupe may do this. "Science, in the sense of inquiry," says Ferrier of St. Andrews, "is not required to bring before us the apparent and the obvious." This is no desideratum. It is the real and the hidden facts we desire to investigate and attempt to explain. The promulgator may not intentionally deceive us; nevertheless, if he does, and deceives himself too, he is deserving of censure. If he professes allegiance to science, we expect him to act in accordance with its dictates. "A man in no case," says Carlyle, "has liberty to tell lies."

By basing our conclusions on superficial data, we may readily err. The following case illustrates this well:—A patient of mine, at the age of thirty-six, gave birth to her first child, and although she had already lived a marital life for eight years, she had never before been pregnant. The explanation of this somewhat anomalous occurrence was soon made evident, for I found on interrogation that the delay in conception was the result of the adoption on the part of the husband of a simple and well-known method of protection, and this because of a mutual desire on the part of the husband and wife to be free from the cares of a family.

From facts collated, it would appear that in all animals the reproductive organs are highly sensitive. The female organs of generation are more sensitive, and consequently more easily disturbed, than are those of the male. Of this we have abundant proof. The most trifling changes in the habits or surroundings will in many cases serve in some occult manner to disturb the function. It frequently happens that the suspected agencies at work are so trivial that we can hardly credit their potency.

Imagination, it has been asserted, exerts a great influence on reproduction. Many stories of alleged authenticity are reported regarding the effects of certain mental impressions on the part of the mother during pregnancy. For example, in the time of Hippocrates a princess gave birth to a black child, in consequence of which she was accused of adultry, and condemned according to law. In this case the court physician made the observation that the portrait of a negro hung at the foot of the bed of the princess, and stated as his opinion that this portrait constantly before the princess had, through the imagination, affected the child *in utero*. The whole question of the influence of the imagination on the product of conception is still a matter of controversy.

Animals tamed and kept in their own country may become sterile, and this apart from any negligence in the way of food or from any want of attention to the general comfort of the animals on the part of those who keep them. Elephants domesticated in their native home, and living to a good old age, evincing at the same time no manifestations of physical deterioration—capable as they are of performing a great amount of work—have never been known to couple, although the functional activity of the generative organs, it would seem, continues. Mares brought up for a long time in stables on dry food continue sterile so long as this abnormal state of affairs exists ; mere change in food and surroundings will, however, soon render them fertile. It has been noted, too, that the lions in travelling shows are more prolific than those in our zoological gardens. Why this should be so is somewhat difficult to understand. The animals kept in shows are no better fed, nor are they better tended than those in the gardens. It is quite possible, however, that a constant variation in surroundings and a perpetual state of excitement, induced by movement from place to place, may account for the greater sexual vigor in animals belonging to travelling shows.

In some cases, it would appear, domestication increases fertility. This is most probably due to a more easy access to food. The supply is not only more abundant, but at the same time more highly nutritious. It is stated that the parent species of dogs was for some time after capture apt to display a tendency to sterility. This disposition has fortunately been gradually eliminated by a long course of domestication.

In other cases, again, domestication, because of the abundant supply of a highly nutritious food, has induced impotence, the sexual appetite at the same time continuing unimpaired. The bears, for example, in our zoological gardens have very often been seen by the keepers to couple, yet the congress seldom proves productive of any result, for they very rarely produce young. Constitutional changes may result from confinement, as in the case of male birds, and still the organs of generation evince a healthy activity. Such anomalies teach us how complex the whole question of reproduction is. Could we but realize this fact, the promulgators of erroneous dogmas would soon decrease. It is barely possible to offer, even after endless labor, any opinion regarding the working of any one factor, or group of factors, on the organs of generation.

Barrenness is, as a rule, revealed quite independently of change in the general health of the individual. I have, however, frequently remarked its association with excess of size and great luxuriance. In plants it has been noted that very high nutrition lessens materially, and may even arrest completely, the reproductive power. Many trees, when they become very luxurious and bear flowers and fruit but seldom, are made more productive by cutting the roots, and thereby lessening the amount of nutrition. I have frequently in my out patient-room remarked that women who tend to lay on fat rapidly are very apt to become barren. Can we consider this tendency to the deposition of fat in the subcutaneous and other cellular tissues as evidence of high nutrition? In the majority of cases there can be no doubt but that the condition is the result of some morbid influence, and that the sterile state exists as a mere concomitant—it is, in fact, dependent upon that condition which has induced the obesity. After the cessation of menstruation and activity of the generative glands women are apt to lay on fat. The tendency in fact is so general that it is considered an association of the climacteric. The nutritive energy, it would appear, devoted during the period of sexual activity to the organs of generation is on the cessation of the associated functional changes otherwise distributed. In the country profit is made by this observation, and the ovaries are removed from some animals in order that they may the more readily and the more rapidly be fattened. A close relationship exists between the mammary and uterine functions. Now, in the case of the cow, it has been noted that a constitutional disposition to form fat is hostile to the power of producing milk. This observation is not without importance.

Absence of sexual passion in the human female does not imply sterility, for we frequently find women who, experiencing no pleasure whatever during coitus, nevertheless conceive, and they may even bring forth as many children as those in whom the passion is readily excited. It has been alleged that sterility in the case of strumpets is largely attributable to the fact that frequent connection blunts the sensation. This factor may, and no doubt does, exert its influence ; that, however, it is the sole cause, is very doubtful. In the case of plants, a parallel has been obtained by experiment. If the ovarium of a flower be fertilized by pollen from another flower, and after the lapse of a certain definite length of time the same ovarium be impregnated with pollen from a different male flower, the two pollens, it would appear, counteract each other, for the seeds so fertilized prove sterile. This phenomenon I explain on the ground that the molecular energy of the one male element is spent in overcoming the molecular energy in the other, instead of being devoted to its primal purpose, viz., that of creating a variation in the molecular state of the female element.

That certain physical states occurring in the organs of generation hinder conception is apparent to every one. Never, however, is the lumen of the cervical canal of the uterus so narrowed in a woman otherwise reproductively healthy as to be a cause of sterility. In order that this statement, which is contrary to that of the majority of gynæcologists, may receive some credence, let me recall the train of events consequent upon impregnation in the bird, as throwing some light on the subject, inferred by the location at which, in the reproductive tract, the germ and sperm cells, must, as a rule, meet and coalesce. The egg in birds—whether prior to or after impregnation—derives a coating of albumen from the upper part of the Fallopian tube. After impregnation the whole mass becomes coated with a calcareous product—the shell—which serves only to protect the contained mass from all extraneous injurious influences to which, during the process of incubation, the egg may chance to be exposed. The secretion of this calcareous incrustation takes place in the lower and somewhat dilated portion of the oviduct in that part which is analogous with the uterus in the human female. It is more than probable that in the bird at least, and probably in all other animals with a similar reproductive tract, the germinal elements coalesce somewhere about the free extremity of the Fallopian tube. Other facts prove that the germ and sperm elements meet and coalesce in the Fallopian tube. Nuck applied a ligature to the horns of the uterus in a dog three days after copulation, and the fœtus developed in the oviduct. This being so, it would be difficult—nay, I hold impossible—to find a woman with an otherwise healthily evolved reproductive tract, in whom the neck of the womb itself, at any part of its extent, was so narrowed that it would interfere with the progression of the spermatozoa.

Climate affects fecundity. European plants refuse to perpetuate their species on the borders of the Nile. The Dutch do not perpetuate their race at Batavia. Change of climate will, however, often aid in the production of offspring. Recently a case bearing on this point, and worthy of record, came under my own notice. A gardener and his wife had lived together in full connubial state for ten years in a little village on the east coast of Scotland. During residence in this northern village the wife had never conceived. Circumstances now compelled them to migrate to the south of England, and soon afterwards the woman became pregnant for the first time. This woman eventually brought forth four children. Here a simple change in climate and surroundings was sufficient to determine fecundity. Cattle do not succeed so well in hot as they do in temperate climates. In the latter they usually conceive when two years old, whilst in hotter countries this can seldom be effected until the beast has attained the age of three years.

Every male and female mated are not fertile, yet each separately may be highly endowed with the power of procreation. The fault casual of sterility may, therefore, be assignable to neither individual but to both. In the organic kingdom we find abundant proof of the existence of this anomalous phenomenon. In the vegetable world it is noted in the case of grafting—the gooseberry, as is well known, cannot be grafted on the currant, and yet the currant will grow and flourish when grafted on the gooseberry. This anomalous reciprocal behavior is difficult to comprehend. There is no apparent reason for the incongruity, and we fail to detect any real structural difference between the nurturer and the nourished. A dog of known sexual activity may cover a bitch under the most advantageous circumstances, and yet the bitch continue barren; in order to prove the procreative power on the part of the bitch, it is only requisite to have her covered by another dog. So, too, a cart mare covered by a blood horse may in like manner prove sterile, whilst the same mare covered by a cart stallion may readily conceive, and bring forth a fully mature colt or filly. Recently I saw a patient, who, during fifteen years of marital life with her first husband, had never become pregnant, yet coitus was fully accomplished and completed. At the age of forty this woman, losing her husband, married a second time, and, strange to say, although past the age of forty, she very soon after the second marriage conceived for the first time. The union of a negro with a white woman frequently produces no result, whilst the coitus of a white man with a negress is very apt to prove fruitful.

In any given case the germ and the sperm cell may meet and coalesce; in order, however, that an uninterrupted segmentation may in consequence of this union be evolved, the coalition must result not in a state of equilibration, but in a state of molecular variation. If the waves of molecular motion, emanating from each germinal element, be too closely related to each other, so closely in fact that they harmonize with each other, the one momentum will counterbalance the other, and there will result a state of equilibrium. In consequence of the induction of this equilibration, all vital reaction ceases. Physics teaches us that if two forces of equal intensity act upon each other from opposite directions, a state of rest must ensue. Experimentally we can demonstrate this dogma. If two rays of light of equal intensity meet each other in coming from directly opposite directions they counteract each other, and darkness or no motion is produced at the seat of contact. So, too, with sound; when waves of sound are opposed by waves of sound of like intensity, the one force is spent in overcoming the other, and silence in consequence ensues at the point of contact.

If the elements produced by a male and female respectively be too closely analogous to each other, there is no superabundant force left when they have commingled to carry on the process of segmentation, and there results sterility. To this form of sterility we apply the term sectual incompatibility. Under such circumstances male and female may each be fertile, yet the sexual congress is wholly sterile.

As I have already observed, the energy expanded by the male in the process of generation is slight when compared with that demanded of the female. We shall frequently find, therefore, that sterility depends upon failure on the part of the mother to supply that amount of nourishment requisite for those evolutional changes consequent upon impregnation. Occasionally we find eggs extruded by the female bird devoid of calcareous covering. This anomaly results from a defective fulfilment of function on the part of the dilated portion of the oviduct. Under such circumstances, the impregnated mass protected only by a membranous coating cannot readily be hatched, for it is then liable to be disturbed by agencies acting on it from without. This failure on the part of the oviduct to produce a calcareous coating must be viewed as a disposition to sterility. The young of animals born under confinement are either born dead or die soon after birth; or again, they may be badly formed; and all these conditions must be considered as associations of a tendency to sterility. Lewis, in speaking of the mulattoes of Jamaica in their marriages among themselves, observes they are as prolific as the blacks and whites; but, he adds, what is a tacit admission of a degree of sterility, that the children so begot have little vitality. The Lipplappas, again (the mulattoes of Java), do not breed beyond the third generation; at this period female children as a rule only are born, and these are invariably sterile.

Lever, without producing facts, states that 5 per cent. of married women are sterile.

From my hospital records I have tabulated 141 cases of women who have been married more than five years. All these women belong to the reproductive cycle, but of the number twenty-five have never been pregnant. All these twenty-five I would not, however, consider as cases of absolute sterility. It is quite possible that had each been married twice instead of once, some at least would have proved fertile. Many of the women who consulted me did so on account of sterility ; in consequence of this, my percentage of sterility is high. Roughly speaking, however, I estimate that one woman out of every fifteen is sterile.

The male percentage is, therefore, much higher than that of the female ; but this is readily explicable when we remember that the male is more exposed to those disorders which, acting locally and constitutionally, are potent factors at work in producing at least a disposition to sterility.

ON THE UTILITY OF MASSAGE IN THE TREATMENT OF DISEASES OF SOME OF THE ABDOMINAL ORGANS. By W. R. Thomas, M. D., M.R.C.P., Consulting Physician to the Sheffield Public Hospital ; late Lecturer on Medicine, Sheffield Medical School.

MASSAGE—or rubbing—as a method of treatment has been known for ages, but more attention has been paid to it during recent years by the medical profession generally, especially in cases of paralysis of the several extremities, owing to the recommendations of Dr. Weir Mitchell, Dr. Playfair, and others ; but I do not think that we, as a profession, sufficiently appreciate the efficacy of the method of treatment of diseases of some of the abdominal organs. It is an old method, which has been known to us since our childhood as medical practitioners, therefore we neglect it, and keep looking out for something new. I shall not relate a number of cases, but shall choose two typical ones out of a larger number which, during the last twenty-six years, have come under my notice, to illustrate the efficacy of the treatment.

A man was sent into hospital from the country suffering from a large swelling in the abdomen, supposed to be malignant, which by pressure caused obstruction. He said that his bowels had not moved for six weeks—of course we had to take his word for that. He could not take much food, was very sick, getting thinner and weaker every day, but there was no cachexia of malignancy. On examining the abdomen I found that it was immense in size, very tympanitic everywhere except on the the left side, where there was a large large swelling about six inches in length and three inches in breadth, but this varied. It was irregularly rounded in shape from side to side and felt very hard, I may also say craggy ; indeed, I am not surprised at anyone mistaking it for a malignant tumor. I recommended large injections of thin gruel to be introduced by means of the long tube twice a day, and the mass to be well and carefully rubbed twice a day from above downwards, especially at the lowest part; very little fæcal matter was passed during the first two days, but on third day a large quantity was evacuated. The passage daily of masses of hard fetid fæces continued for about four days, the swelling entirely disappeared, and the patient was allowed to go out. In a few weeks this man presented himself as an out-patient, suffering again from accumulation and obstruction in the left colon. This time massage and large injections at home soon relieved him. The descending colon seemed to have lost its tonicity.

During the last twelve months, since I have been at Bournemouth, I have had some interesting cases, one of which I shall relate. A lady, about fifty-four years of age, who had many years ago suffered from a severe attack of typhlitis, was now laid up, and complained of pain in the right iliac region once more. The bowels had been rather costive for some time, but were moved every day or every other day. They were now more costive than usual, the appetite was poor, there was slight tenderness in the right iliac region, and a large swelling extended from there to the right hypochondriac region. There was great debility and anæmia, and the pulse was rapid and small. Evidently the colon was distended by a hard fæcal mass from the cæcum to the right angle. Very large injections twice a day were recommended, and gentle rubbing over the upper end of the right colon. Very little fæcal matter was passed during the first twenty-four hours, but after that the quantity increased, and hard scybalous masses were evacuated daily until the swelling entirely disappeared. In this case the massage was brought to bear on to the upper third of the mass only at first, as the cæcum was tender, but as the scybala became dislodged above and extruded the tenderness became less. Ultimately the whole mass was removed, and the patient got quite well. Aperient remedies given before the illness came on never seemed to act thoroughly, and although given at one period to assist other treatment they never satisfactorily acted on the bowels.

It was evidently intended by nature that the muscular movements of the intestinal canal should be aided by active contractions of the muscles of the abdomen, and it is equally evident that the liver and gall-bladder should be pressed upon directly and indirectly by the abdominal muscles, including the diaphragm; and if gentlemen will persist in driving to their places of business and back, and ladies will, because they can afford to keep their carriages, go out every afternoon sitting in one position and hardly ever have a real walk from year's end to year's end, they must expect to suffer. They have done their best to bring on disease. The liver becomes immense in size, inspissated bile remains in the tubes, the same lies dormant in the gall-bladder, and gall-stones form. Why? Because it and the gall-bladder are never well kneaded as they would be by the abdominal muscles if the patient took reasonable exercise; and in the same way the thin muscular walls of the intestines can never propel their contents, unless aided by the outside pressure by the abdominal muscles.

Wealthy patients will drink gallons of the several aperient waters in a year to act on the bowels; but it is almost impossible to persuade any of them to take a little exercise, which would, as I have shown, assist the thin muscular walls in propelling their contents, and also express an increased quantity of bile, and aperient, into the duodenum.

Whenever a patient comes to me now who gives a history of past trouble in cæcum, colon, or sigmoid flexure, and complains of constipation, excessive fulness, flatulence, or pain, I invariably make a careful examination; and almost as invariably find an accumulation which probably if neglected would end in inflammatory mischief, or perhaps ulceration, but which is soon relieved by injections and careful rubbing. Indeed, whenever any patient who leads a sedentary life, especially if inclined to be stout, complains of constipation and such abdominal symptoms as fulness, flatulence, &c., I examine, and often find an accumulation somewhere. I adopt the same treatment and follow up by exercise, diet, and aperient remedies.

Massage is a powerful agent for good or for evil, and great care must be used in choosing proper cases. If the bowel is actually inflamed or ulcerated increase of mischief or perforation might ensue; but I must say in cases of typhlitis, with accumulation in the ascending colon, more can often be done than prescribing morphia, diet and rest, and thus leaving the cause of all the mischief still there to irritate. I have seen injections and careful rubbing of the upper part of the colon, away from the seat of tenderness, give rise to easy evacuations, and the ascending colon has been gradually emptied from above downwards, without excessive action of the muscular coats and risk, but of course the treatment has been carried out with great care, and I have never seen any case injured by such. Of course I am speaking only of cases where there is accumulation in front of the cæcum. I send these remarks for publication, and choose these two typical cases, not because there is anything new in the treatment, but simply because I believe we do not sufficiently utilize the valuable aids we have and we know of. I feel sure that scores of cases of obstruction, of typhlitis, and ulceration of bowels could be prevented by this kind of treatment. Instead of examining carefully such cases and treating at once, we often are satisfied with asking questions only, and prescribing pills which perhaps never thoroughly open the bowels, or, at all events, never remove the offending mass; and the same remarks will apply to the congested or fatty liver, or that in which the bile becomes inspissated and incipient obstruction is present. It is astonishing how the size of the organ becomes diminished, and the symptoms disappear after rubbing and kneading once a day for from two to four weeks, assisted, of course, by other treatment.

POST-GRADUATE LECTURE ON THE BEGINNINGS OF JOINT DISEASE IN CHILDREN. Delivered at the Hospital for Sick Children, Great Ormond Street. By J. Hammond Morgan, F. R. C. S.

In this lecture attention was called to the anatomical analogies of the knee and the elbow as being borne out by their pathological characteristics as well, disease of the synovial membrane going through much the same process in the one as in the other, and in both cases manifesting itself beside the bony prominences—in the case of the elbow on either side of the olecranon, and in the case of the knee at points above and below and upon either side of the patella.

Acute spontaneous diseases of the synovial membrane in either of those joints were very unusual, and occurred either as the result of pyæmia or of some form of blood poisoning akin to it, or it might follow upon exanthematous fevers or tyhoid, where the poison might have been conveyed from the intestinal ulcers to the surface of the synovial membrane. Chronic affections were not rare, occasionally happening as a sequel of some acute affection or the result of rheumatism—neither, however, being very common in children. Tuberculosis was by far the most frequent cause of chronic affection of the synovial membrane, and often the strumous degeneration of Brodie ensued upon an acute or subacute inflammation, in which all the characteristics of synovitis were present; then a denser condition followed, in which the lining surface of the membrane changed from its ordinary character to that in which a granulation tissue was developed until the cavity of the joint was filled up. It was difficult to say with any authority that this pulpy degeneration was always of tubercular origin, as few opportunities arose for investigating this subject, and it was not absolutely certain that the bacillus was to be found—a fact, however, which did not prove that the origin was not of that character. The question was not definitely settled and one could only state one's impression from the surroundings—namely, that the majority of cases of swelling of the synovial membrane, in which a large amount of granulation tissue was deposited in the interior of the joint, was due to the presence of bacilli in almost all cases. Against that statement it might be objected that many such cases subsided under proper treatment, because the average of such affections brought under observation showed a large proportion of them getting completely well under conditions of rest, secured by properly applied splints and generous attention to the state of the system. The light leather splint, by confining the movement, but permitting the air to circulate around the joint, by which the skin was not affected, seemed to be the best application. Under such treatment the swelling subsided, the wasted muscles again developed, and a perfectly useful and movable joint was left. Should the malady not go on happily, the granulation tissue broke down in small abscesses, and these, by coalescing, formed large collections of pus which would ultimately make its way to the surface. In these cases the antiseptic treatment of Lister—exposing and cleaning out the cavity and clearing away the new material before the cartilages were affected—could be most usefully applied, the great point in the treatment being to perceive when the case was progressing to abscess, and to treat it before more important structures than the synovial membrane had become affected. The subject of tuberculosis was far from being settled, and the discussion of mere pathological points would be left to another occasion. In joints like the knee and elbow, the epiphyses brought into contact with the articular ends of the bone were exactly in the same position as the cancellous bones of the ankle and wrist, with even greater tendency to disease. A very slight injury, direct or indirect, sometimes set up inflammation in the epiphyses or in the epiphysial cartilage between the end of the bone and the articulation. In either case the inflammation was of a very serious kind, because if it went on to suppuration the pus had to make its way to the surface of the bone or to the under surface of the cartilage, in which case the joint could not escape being affected. The inflammatory process consisted of a hyperplasia of the medulla, as in cancellous tissue of flat bones,, and the direction in which the matter progressed depended on the part in which the disease originated. In acute cases the pus made its way to the surface and got underneath the skin without going forward into the joint; but in more chronic cases it formed a larger cavity, exposed the under surface of the cartilage near the joint, and, having done so, deprived that part of the cartilage of all nourishment. Destruction then became rapid, and a way was found for the pus to enter the cavity of the joint. The majority of these cases were also due to tuberculosis, although this was very difficult of proof, partly because the tissues had undergone a considerable amount of destruction before any possibility of investigating their nature could be obtained, and partly on account of the difficulty of demonstrating the bacillus.

In mentioning other causes of joint disease in children, the lecturer thought syphilis was spoken of oftener than was warranted by actual experience, though it was not denied for a moment that many cases of joint disease in the infant were due to the syphilitic taint. When due to that cause it was exceedingly easy to recognize, and it yielded in a marvellous way to treatment. The syphilitic child presented a yellowish waxy appearance, having ulcers on the mouth, nose, or anus, and the condition of the joint affected could hardly be mistaken. The child lay with the limb in a position in which the affected joint was perfectly passive; so much so that the name of "pseudo-paralysis" had been given to this disease before it was known to be due to syphilis. Crepitus could sometimes be elicited in the swelling, either owing to the loss of the cartilages from the two surfaces of the interior of the joint, or what was more probable, to the separation of the epiphysis from the shaft of the bone, but it was impossible on account of the swelling to say which. At all events, under treatment the joint became freely movable, and all the signs of crepitus disappeared. A good many people were apt to put down to syphilis many affections of the joints really explainable by other means, although the very definite characteristics of such a diseased condition, particularly where the elbow, the shoulder, or the knee was affected, were quite unmistakable.

The following table gives the results of an analysis made by the lecturer at the Ormond Street Hospital of 158 cases of joint disease during the years 1879-1880:

	Upper extremity.			Lower extremity.		
	Shoulder.	Elbow.	Wrist.	Hip.	Knee.	Ankle.
1879....	1	5	1	47	23	3
1880....	4	4	2	43	17	8
Total	5	9	3	90	40	11

From these figures it would appear that while disease of the joints formed 5·5 per cent. of all the cases which came to the out-patient room of the hospital, cases of disease of the hip were 56·9 per cent. of the total, and the frequency of joint disease of the lower extremity over joint disease of the upper is very forcibly illustrated, From the extent of the synovial membrane of the knee it forms more frequently than any other joint the site of tubercular disease. One of the earliest symptoms of knee-joint disease was to be discovered by gently pressing round the bony surfaces, when it would be found that pain, due to an inflammatory state of the cancellous tissue of the epiphysis, whereby the periosteum became implicated, could generally first be elicited at the most prominent portion of the inner condyle, and might occasionally be detected over the outer condyle. Sometimes a certain amount of necrosis took place. With proper care this might be arrested, and entirely subside, or might leave some chronic thickening and enlargement of the part, which might not interfere with the full use of the articulation, and, if recognized before the cartilage was involved, a timely incision and removal of the sequestrum would frequently save the joint. With regard to the tibia, similar results might occur, although certain anatomical peculiarities—the firm fibrous structures intervening between the upper part of the head of the tibia and its articulation with the fibula—prevented detection from the outer side, and therefore the pain, in the majority of tibial cases, presented on the inner aspect. It would hardly be thought that the patella, covered with fibrous tissue, and so well supplied with nourishment, could give rise to this form of disease. Two cases were observed last year, in one of which arthrectomy was performed. The cartilages of the femur and tibia were unaffected, but a groove on the outer service of the cartilage of the patella led to a carious cavity within the bone, which communicated with an abscess on its outer aspect by a similar sinus.

The pathological analogies between the knee and elbow were nearly as closely related as the anatomical ones. From the fact that the earliest symptom of implication of the elbow-joint was found on either side of the olecranon process, where the synovial membrane is nearest to the surface, and also since so many cases occur which recover by means of complete rest brought about by the application of suitable leather splints, we are forced to believe that the mischief begins in that structure. But if the cases which did not progress favorably were examined, it would be found that those requiring excision of the joint commenced by an epiphysitis leading to necrosis either of the lower end of the humerus or of the ulna. He had no recollection of having seen any case in which disease commenced primarily in the head of the radius or in the olecranon, for the simple reason that until the tenth year these parts were cartilaginous. Notwithstanding the fact that in the last cases in which he had performed excision of this joint the disease had manifestly originated in the ulna and implicated it to a considerable extent, and secondarily involved the synovial membrane, he did not relinquish his impression that in the elbow the disease most frequently originated at the lower end of the humerus. An accurate analysis might show that disease of the knee in early life was more often situated in the synovial membrane, but after the fifth and up to the tenth year, when bony growth was active in the epiphysis, disease would more frequently originate in that situation.

THE EARLY HISTORY OF FLUID ACCUMULATIONS IN THE FALLOPIAN TUBES. By Graily Hewitt, M.D., F.R.C.P.—*From the Medical Press and Circular.*

The early history of those fluid accumulations in the Fallopian tubes which have of late attracted so much attention, evidently requires careful consideration in view of the fact that their presence in the form of hydro-pyo-or hæmato-salpinx constitutes pathological conditions capable of giving rise in certain conditions of intensity to severe and various symptoms.

The possible causes of tubal fluid accumulations are numerous. The principal may be mentioned: Fallopian pregnancy, rupture of cysts into tube, disease of lining of tubes giving rise to increased secretion, fluid derived from Gräafian follicles, or from peritoneal cavity, fluid derived from interior of uterus. Under most of these heads there are several varieties, and the fluid may be of a different character in different cases.

An important class of cases are those in which the cause is gonorrhœal inflammation, and although the disease in the form of salpingitis is possibly not so common as it has been represented to be, no doubt it exists. Another inflammatory (non-specific) cause of salpingitis is catarrhal inflammation of the lining of the tube spreading upwards, as Mr. Doran suggests, by extension from the uterus.

One point in reference to the early history of cases of Fallopian fluid accumulation which appears to deserve attention is the patency or want of patency of that part of the tube which immediately adjoins the uterus where for a distance of over one-third of an inch the Fallopian tube is narrowed normally to the size of about one-twenty-fifth of an inch diameter. How far, it may be inquired, are fluid accumulations in the tube determined by the narrowness of the tube at this point, or by further lessening of the calibre of the canal such as may be produced in a variety of ways? It is probable that normally the canal at this situation, though so small, is sufficient to maintain a proper drainage of the Fallopian tube, that is to say, on the assumption that the Fallopian tube *is* so drained. But when the fluid in the tube is for any reason considerable, or when the lumen of the canal is diminished, the condition would seem to be such as must lead to retention of such fluid in the tube. The peristaltic action of the tube itself appears to be the provision for providing for evacuation of fluid *per uterum*, but this may prove inefficient if the tube be partly blocked by contraction of the tube at this situation. It appears reasonable to suppose that in some cases at all events, the primary pathological conditions in tubal fluid accumulation may be insufficient patency of the Fallopian tube at its outlet. Under such circumstances retention would be an almost necessary consequence.

The following are some of the possible causes for occlusion, partial or complete, of the Fallopian outlet: 1. Inflammation, specific or otherwise, whereby the mucuous membrane is thickened and the calibre of the canal lessened. 2. Severe displacement backwards of the uterus, together with fixation of the uterus by adhesion of the folded twisted broad ligament. Cases of this kind are mentioned by Wylie, of New York, who considered the lumen of the inner end of the tube was stopped in this way. (See *American Journal of Obstetrics*, 1886, p. 327.) Dr. Mundé agreed in this explanation, though he had seen displacement and adhesion of uterus without tubal lesion. There are many cases of uterine displacement in which the Fallopian outlet may be effected in some such way as that described by Dr. Wylie, and it is probable that in severe cases of anteflexion the patency of the tube at its outlet may be disturbed, and thus a fluid accumulation in the tube may be commenced. As regards the escape of accumulated Fallopian fluid into the uterus, Nilsen quotes a case of dermoid cyst and pyo-salpinx where death followed tapping, and the uterine orifice was abnormally large, so that pus could have escaped into the uterus. In another case he had made a diagnosis of pyo-salpinx which suddenly disappeared, there being a large amount of pus simultaneously discharged *per uterum*. Janvrin has seen several cases in which he was convinced that pus was discharged from tube into the uterus, in one case on three separate occasions. Dr. Howard A. Kelly, of Philadelphia, states (*American Journal of Obstetrics*, 1886, p. 1274) that he has sometimes noticed a stillicidium of bloody grumous material *per uterum et vaginam* which undoubtedly flows from the tube, and is altogether analogous to the free purulent discharge from the tubes of pyo-salpinx which he had seen. He would in future endeavor to catheterize the tube in such a case, where the discharge was enough to lead one to suspect a patulous uterine orifice.

When fluid is discharged in gushes from the uterus at intervals, the question arises as to whether such retained fluid is simply a retention in utero or whether it is primarily, at all events, a retention in the tube. I have seen cases in which there seemed certainly to be uterine retention. It is, of course, quite possible that in cases where gushes of fluid escape at the os uteri from time to time, the fluid may be subjected to a double retention, first in the tube, secondly in the uterus. Severe flexion is the condition which I have hitherto found associated with liability to escape of gushes of fluid. It may be that the flexion creates the tubal retention primarily by compressing the tubal outlet as above explained.

The diagnosis of presence of tubal retentions is confessedly difficult. Very careful double examination, going over the ground slowly and deliberately, will assist in the diagnosis, but will not always suffice, and experience has shown that many cases are only capable of being cleared up by an exploratory laparotomy. While it is admittedly necessary to adopt this latter procedure in cases of severe or chronic suffering otherwise unreliable, it is to be hoped that in future means will be found for rendering diagnosis more exact. It may be hoped also that especially now that it is known that cases of tubal accumulation occur far more infrequently. There would seem to be room for the belief that if the malady were discovered at an early stage and while the tubal outlet is fairly patent the tube might be restored to functional capability by appropriate treatment. Restoration of the uterus to its proper position, hot vaginal douches, rest and avoidance of exertion would doubtless be essential parts of the treatment.

LECTURES.

The Milroy Lectures on the Etiology and Prevention of Phthisis. Delivered at the Royal College of Physicians. By Arthur Ransome, M.D., F.R.S.

Lecture I.

Tubercle at the present day carries off annually nearly 70,000 persons in the form of phthisis, at ages between fifteen and forty-five, the most useful stages of human existence; it kills more than one-third of the people who die, and nearly half between fifteen and thirty-five. Moreover, in its prolonged and painful course, it either prevents its victims from earning their livelihood, or at least interferes greatly with their daily work. Its habit of seizing upon the flower of the population, its slow but almost certain progress towards death, the utter misery of the last few months or weeks of existence —all these are features in the fell disorder that render its study all-important not only to medical men, but also to the statesman and to all who are concerned with the welfare of the nation. Up to a recent period not only was consumption supposed to be incurable, it was also regarded as almost enevitable, and the fate of the consumptive patient himself was generally looked upon as hopeless; the dictum of Sir Thomas Watson that "tubercular disease when established is beyond our power" being currently accepted as the truth. But these views of the inevitable character and incurability of phthisis are now altered; for not only does clinical evidence show a considerable percentage of cure and improvement under judicious treatment, but the evidence derived from the post-mortem examination of adults who have died from diseases other than phthisis shows that a very large percentage of persons have suffered and have recovered from tubercular disease of the lungs. With regard to the preventability of the disease still less can any doubt prevail; during the last thirty years the returns of the Registrar-General show that the annual rate of mortality from phthisis has been reduced by more than one-third. This improvement, which is not confined to England, is too large to credit to greater accuracy in diagnosis; it is attributable to the prevention of phthisis by improved hygiene. The records of the mortality from this disease in the British Army and Navy furnish evidence of the strongest kind of the influence of sanitary measures as a preventive of consumption, and Dr. Buchanan has shown that good drainage of a locality may diminish by one-half the prevalence of the disease.

Though the special pathology of tubercle has been thoroughly searched out for many years, it must be remembered that medical science does not stand still, and within comparatively recent times great additions have been made to our knowledge of the subject. It is now eight years ago since Professor Koch succeeded in demonstrating the existence of a specific organism in all tubercular diseases, and by pure cultivations of the bacillus, and by numerous experiments on animals, he may be said to have fully proved its essential relation to the disease. The early years after this discovery were taken up with its verification and its application to previously ascertained facts. Clinical researches and inoculation experiments served only to more firmly establish Koch's observations. I shall attempt to bring into one field of view the various facts bearing on the natural history of the organism; its favorite haunts and breeding-grounds, the soil most favorable to its growth, the food that will nourish it into virulence, and, most important of all, the conditions under which it may be robbed of its power for evil. One consequence of the successful search for a cause of tubercle, and that perhaps not the least important, is that it thrusts aside all former speculations as to the nature of turberculous growths; the essential pathology of phthisis, according to modern nations, may be stated very briefly. Dr. C. T. Williams says that reaching the alveolus through the breath, the bacillus enters the epithelial cell and causes proliferation by irritation. The alveolus becomes stuffed with cells; and if the irritation be a gradual process, it gives rise to a highly nucleated product, the giant cell. If the irritation be great, caseation is rapidly produced, though whether this be due to necrobiosis from overcrowded proliferation, or, as Mr. Watson Cheyne thinks, to a chemical change in the cells brought about by the action of the bacilli, is not yet determined. The irritated masses thus formed set up a hyperæmia with consequent migration of white blood-corpuscles, and thus the diseased focus tries to keep off the bacillus from the system by encapsulating itself. The epithelioid cells have been described as arising from the action of the tubercle bacilli on the fixed cells of the connective tissue or on the epithelium, and out of the epithelioid cells the giant cells proceed, an increase of nuclei taking place in them while the partition of the cell body is omitted. If the bacilli are few, then the epithelioid cells and giant cells will be abundant; but if the germs are numerous, then the white corpuscles will emigrate and gradually supplant the larger cells. In Ziegler's words, "we must regard tubercle as an inflammatory product, an infection." It is believed by many that the constitutional manifestations of tuberculosis are not directly due to the bacilli, but to toxic principles evolved during their growth and multiplication. The characteristic points connected with the growth and development of the bacillus are the small range of temperature within which the organism can be successfully cultivated (between 86° and 107° F.), the length of time (from two to three weeks) required for its development, its tenacity of life in sputum, and the antagonism that exists between the living elements, especially the wandering cells, the leucocytes of the body, and the bacillus. The reason of tubercle spreading infectively through the system has also been made plain.

The mode in which the bacillus gains access to the body has been long recognized; the virus causing it evidently comes from without. Thus we see usually a primary and immediate attack upon the respiratory system, the lungs, pleuræ, bronchial and tracheal glands; next in frequency to be attacked come the glands about the pharynx, and next after these, probably owing to the swallowing of the sputa, we find the lymphatic apparatus of the walls of the intestine, the isolated agminate follicles, most liable to be the seat of tuberculous ulceration. The œsophagus escapes contagion because of the rapidity of the transit of the virus and the stomach, perhaps owing to the presence of the gastric juice. Through the intestinal ulcers a path is opened to the mesenteric glands, the liver, and the whole of the rest of the body, thereby producing general tuberculosis.

The placing of tuberculosis amongst microbic diseases imposes upon us the task of determining its affinities and assigning to it its place among other such disorders. Tubercle can only be said to be allied to ordinary epidemic diseases in the sense that they are all parasitic disorders. It may rather be regarded, like leprosy, as a type of an endemic disease. Whether contagious or not, phthisis is sharply marked off from ordinary exanthematous disorders, not only by its specific miro-organisms and its endemic habit, but also by its usually slow, creeping, and irregular course, and by the permanent growth, alteration of structure, and destruction of tissue that are brought about by the bacillus. In searching for the diseases kindred to tubercle we must look for those which are chronic, endemic, irregular in their course, and produced by the action of a micro-organism which is of comparatively feeble power of irritation, but which, nevertheless, brings about inflammatory action tending to produce permanent changes and necrosis of the tissues, travelling along the lymphatics or in the currents of the blood. Chronic glanders, or farcy, includes most of these points of resemblance. It is produced by a bacillus. The farcy buds closely resemble tubercles in their structure. Like tubercle, it has been known to attack the nervous system, to produce intractable ulcers of the skin and mucous membrane and affections of the joints ; susceptibility to it is enhanced by unhealthy conditions of life. A close affinity to tuberculosis may also be traced in such diseases as actinomycosis, frambœsia, and Madura foot. In actinomycosis, nodules somewhat like tubercles form, having in their centre the fungus surrounded by a zone of large nucleated cells, and these again by a small-celled area.

The disease, too, seems to preserve a somewhat endemic character, but it is at present chiefly epizootic, and the micro-organism causing it belongs to an order distinct from the bacillus of tubercle. But the closest resemblances are to be found between tubercle, syphilis, and leprosy ; and perhaps at some future time, when the microbe of cancer has been made out, this disease also may be added to the group. All are of microbic origin, are capable of varying degrees of intensity, possess the power of renewing their ravages after varying periods of dormancy, produce growths strikingly similar pathologically, and are or have been found distributed apart from considerations of climate, race, and habits of life. Syphilis is in certain points more like an exanthematous disease ; but, nevertheless, it appears to be due to a bacillus, and the lesions characteristic of it appear to result from the irritative action of the organisms. But of all these disorders the nearest approach to tubercle is to be found in leprosy. In their pathology, in their course and distribution, and in many other features, these diseases show the closest relationship. A micro-organism is associated with each disease, and the bacillus of leprosy resembles that of tubercle both in its appearance and in its reception of staining fluids. Koch points out that although the bacillus of leprosy can be stained by the same method as the tubercle bacillus, the contrary does not hold good for the former stains by Weigert's method for coloring nuclei, but not the latter. The bacilli of lepra are also found in much larger proportion in the diseased tissues than those of tubercle. Leprosy is like tubercle in its mode of attack, contagion taking place first on the exposed parts; and it also resembles it in being slow in its progress, though it is usually slower than tubercle, both diseases tending towards a fatal issue, but both being capable of becoming absolutely quiescent and inert for long periods. Again, although the leprosy bacillus affects chiefly the skin and mucous membranes, the nerves, and bones, in its tubercular forms, the structure of the leprous "knots" gives ample evidence that they are formed in the same way as those of tubercle. Both are distinctly endemic diseases, and are, or have been, found in almost every country where human beings are collected together in any number; they are equally uninfluenced by climate and temperature, and, as phthisis is now, so leprosy was formerly, endemic not only in Asia and Africa, where perhaps it originated, but also throughout Europe. It existed in Lombardy as early as the year 630, and in the eighth century many leper-houses were founded in France, England, Germany and Italy. Its presence even now is sufficiently manifest in the four quarters of the globe to show that it is independent of climate. India is its great hotbed, though it seems to have a special predilection for islands. Though certain races are more prone to it than others, none are entirely exempt. It is more common amongst the poor and filthy than amongst the rich and cleanly. It appears amongst those who are well fed as well as amongst those who are confined to vegetable diet and those who feed upon fish. In the early times and middle ages in all countries leprosy was regarded as contagious, and this belief still remains in places; indeed, the greatest differences of opinion on this point are even yet found amongst medical men. Similar differences of opinion are to be found as to the influence of heredity in both diseases, and a recent writer states with regard to leprosy that, though it is not an hereditary disease, the susceptibility of the individual appears to be of more importance than in any other bacterial disease. It is not surprising that, with all these points of similarity, the question should be asked whether leprosy is not itself a tuberculous disease. In answer to this, it may be said that tuberculosis is now seldom seen in leper hospitals, and the acute form of the disease is not more frequently seen amongst phthisical lepers than amongst other persons affected with phthisis; again, the different behavior of the two kinds of bacillus in cultivating media, their selection of certain tissues as their chief haunts, and the difference in their rate of progress, show that, though closely related, there is no identity to be discovered between them.

Certain practical conclusions may perhaps be drawn from this review of the pathology and affinities of tubercle which may assist us when we come to deal with the question of its preventability. (1)

That the bacillus which provokes the disease comes most frequently from outside the body, and is conveyed by means of the atmosphere; (2) that it requires a certain length of time and certain narrow limits of temperature within which it can develop; (3) that when it is entrenched within its encapsulating tubercle it is placed at a distance both from the current of blood in the vessels and from air entering through the lungs; (4) that its life in the body is usully a short one, and that the lung tissues are antagonistic to it, or, to use Dr. Moxon's words, "the life of the bacillus parasite is difficult, easily discouraged by unfavorable circumstances, like an aphis by an easterly wind"; (5) and that the resemblances which it bears to the bacillus of leprosy may encourage us to hope that, as this latter disease has been banished from our country, so also may the different forms of tuberculosis ultimately disappear.

CLINICAL RECORDS.

Treatment of Diphtheria. Illustrated by cases. By R. W. Sutton Barraclough, M.D., L.R.C.P.

I will give a short account of a series of consecutive cases of diphtheria occurring under my own observation. They are fourteen in number, and of these, eleven were under my own care, the remaining three being cases to which I was called in consultation. They all occurred within a period of twelve months in 1887 and 1888, and in two of the latter I performed tracheotomy. In the eleven cases under my own care the local treatment which I have described was strictly carried out. In three of these cases the disease extended to the nasal cavities, but in not one instance did it extend to the larynx. In one case paralysis of the muscles of the palate, pharynx, and tongue occurred during convalescence, causing fluids to pass through the nose during deglutition, and affecting also the speech. In another case there was albuminuria. The whole of these cases were of a severe type, but they all completely recovered. With regard to the three cases which I saw in consultation, in two of these no local treatment had been adopted, and in the remaining one, although sulphurous acid spray had been used, it was soon abandoned, in consequence of the difficulty of applying it. In each instance the disease spread to the larynx, and the three patients died.

Case 1. M. D——, aged twenty-eight years. Both tonsils covered with diphtheritic exudation. Liquor ferri perchloridi fortior applied several times in the twenty-four hours, and chlorinated soda spray used every half hour. No extensions. Patient convalescent in nine days.

Case 2. C. B——, aged six years. Both tonsils affected. The local treatment, as described was carried out. The disease extended to the nasal cavities, which were thoroughly syringed out with perchloride solution. In this case paralysis of the palate, pharynx, and tongue occurred during convalescence. Quinine, strychnine, and iron were given, and the child completely recovered. There was no extension to tho larynx.

Case 3. G. B——, aged eight years, brother of the above. Both tonsils were affected. This child had been isolated from his brother out of the house for six weeks, and unfortunately returned home without my sanction, and so contracted the disease. The local treatment was adopted, and he made a speedy and complete recovery. There was no extension to the larynx. In this case I have no doubt that the outbreak of the disease was attributable to the existence of an old cesspool under the scullery floor, which was full of filth.

Case 4. D. M——, aged five years. Both tonsils and soft palate were extensively covered with diphtheritic membrane. The local treatment was at once adopted, and the tough pultaceous membrane soon showed signs of becoming detached, coming away in large pieces, leaving a healthy, easily-bleeding, ulcerated surface. The application of the iron solution was continued for some days longer, as also the chloride of soda spray. The disease extended to the nasal cavities, and quantities of false membrane and offensive muco-purulent matter were brought away by syringing with the iron solution, the smell from the nostrils being most offensive. There was slight albuminuria on the tenth day, but it entirely disappeared on the fourteenth. There was no extension to the larynx, and the child completely recovered. I would here mention that this case, together with the following five cases, constituted a family of six children, and that the five unaffected ones were sent away from home within an hour of my seeing the case. They were also under my immediate inspection for a fortnight. Showing no symptoms of the disease, they were sent into the country to a very healthy locality situated amongst the Surrey hills.

Case 5. A. M——, aged three years and six months, brother of the last-mentioned patient. He had been, as I have said, removed to the country with the other four, and had been separated ten weeks from his sister, who was first affected. His sister then joined them in the country, and a fortnight afterwards the disease attacked him. I need scarcely say that rigid disinfection had been carried out in the case of the sister; and that she wore no article of clothing which she had worn during the disease, they having all been burnt. The house in the country where this case occurred was a comparatively new one, and had been recently thoroughly redrained. Strangely enough, several cases of diphtheria, I was given to understand, had recently occurred in the neighborhood. Now the question arose, Was the disease in this case contracted in the locality, or did it arise from coming into contact with the sister, even after a period of seven or eight weeks after convalescence? I am inclined to adopt the latter view, and think in all probability that the secretions of the mucous membranes of the sister were still infectious, and that perhaps the germs of the disease were exhaled by the breath. In this case the child was removed home, and the local treatment carried out. Both tonsils, soft palate, and uvula were affected. The temperature in this case fell on the day after commencing treatment from 103·4° to 98·4°, and the pulse from 150 to 96. On the evening of the fourth day the temperature was 97°, but had risen next morning to 102·4°, with a pulse of 164. On the next day the temperature fell to 98·4°, and on the seventh day to 97°, and then remained subnormal, with one slight exception, to convalescence. Large pieces of membrane became detached, and were vomited when the solution was applied. Albuminuria occurred on the eighth day, and continued till the sixteenth day, when it disappeared. There was no extension to the larynx, and recovery was complete.

CASE 6. W. M——, aged seven years, brother of the last patient. The symptoms commenced three days after their appearance in the former case. Both tonsils were affected. Local treatment was at once commenced. Portions of membrane became detached and were vomited. The throat cleared rapidly; the temperature fell to 98·2° on the sixth day, having started at 102·4°, and then remained subnormal during convalescence. There was no extension to the larynx, and the child completely recovered.

CASE 7. H. M——, aged two years and six months, one of the same family. The symptoms commenced six days after the former case. Both tonsils, soft palate, and uvula were affected. Temperature 102·4°. Local treatment at once commenced. Temperature on the third day 98°, and then was subnormal during convalescence. Large portions of membrane were detached and vomited. There was no extension to the larynx. Recovery complete and rapid.

CASE 8. D. M.——, aged eight years and a half, another of the same family. The symptoms commenced on the same day as the former case. Both tonsils were affected. Temperature on the first day was 99·4°. The local treatment was carried out. The temperature never rose, and from the third day was subnormal throughout convalescence, which was very rapid. There was no extension to the larynx. This case was the least severe of the six.

Case 9. L. M.——, aged five years. This is the sixth and last case in this family. The symptoms commenced nine days after the commencement of the previous case. Both tonsils, palate and uvula were affected. The local treatment was adopted. The temperature was very vacilating during the first four days of the disease, but became normal on the fifth day, and then remained subnormal during convalescence. Large portions of membrane were detached and vomited. There was no extension to the larynx, and recovery was complete. Seeing that three of the five children were suffering from the disease at the same time, one might reasonably have supposed that the morbid poison would have become very powerful, and that some one or other of the cases might have turned out badly. That such would have been the case, I verily believe, had not local treatment and disinfection been thoroughly carried out.

Case 10. A. M.——, aged six years, a delicate strumous girl, who suffered from hypertrophy of the tonsils and enlargement of the cervical glands. When first seen both tonsils were completely covered with diphtheritic exudation, and the fetor of the breath was most offensive. Local treatment was commenced at once. The temperature in this case never rose above 100·6°. Large pieces of membrane became detached and were vomited. The throat rapidly cleaned up, leaving healthy red ulcerated surfaces. The disease extended very severely to both nostrils. They were thoroughly flushed with the perchloride, and immense masses of false membrane were brought away of a most fetid odor. I had literally to pull them gently from the nostrils like worms; this condition continued more or less for some days, then leaving a muco-purulent discharge for some time longer. There was no extension to the larynx. The child was left very weak and anæmic, but eventually made a complete recovery.

Case 11. C. M.——, aged one year and nine months, brother of the last case. The symptoms did not appear until four months after the former case. Left tonsil only affected. Local treatment at once adopted. Next day there was slight deposit on the other tonsil; both, however, were perfectly clean on the evening of the third day. The temperature never rose above 99°, and on the sixth day became subnormal. There was no extension to the larynx, and recovery was complete,

I will now briefly allude to the remaining three cases to which I was called in consultation.

Case 1. A. N.——, aged eleven. I saw him on the ninth day of the disease. The whole of the fauces and back of the pharynx were covered with false membrane of a dark ashy-yellow color, and the parts were sloughing in places. No local treatment had been carried out. The poor lad was completely poisoned by the disease. I ordered his removal to the hospital, where he died two or three days afterwards.

Case 2. E. M.——, aged seven years. I saw her about the seventh day of the disease. The whole of the fauces were covered with diphtheretic membrane, and the disease had extended to the larynx. The respiration was considerably impeded, and the child was in a most critical state. No local treatment had, I believe, been adopted beyond external poulticing. I advised the performance of tracheotomy with as little delay as possible. While the necessary preparations were being made, I at once carried her to the table prepared, and performed tracheotomy. The breathing had almost ceased, being spasmodic, but the heart was pulsating. I removed a perfect membraneous cast from the trachea about an inch and a half long. The heart still continuing to beat, I endeavored to inflate the lungs from my mouth by a catheter passed through the cannula, but without success. Artificial respiration was then resorted to for about twenty minutes, but also without success, the pulsations of the heart having gradually ceased.

Case 3. L. L——, aged seven. I was summoned by telegram to the borders of Wales to see this child. Within eight hours and a half I stood by her bedside. She had been suffering from diphtheria five days, and there were symptoms of the larynx becoming involved. Both tonsils were affected. Sulphurous acid spray had been attempted to be used, but had not been persevered with in consequence of the resistance of the child. I applied the perchloride of iron solution, and repeated it at intervals, and the chloride of soda spray was frequently used. I sat up with her all night, and symptoms of impeded respiration becoming evident in the morning, I determined to perform tracheotomy if, after having given an emetic, no relief should be afforded. The emetic did not relieve the respiration, and feeling certain that to wait until the symptoms should become more urgent would be dangerous, I performed tracheotomy under chloroform. The breathing instantly became relieved, the child was put to bed under the usual conditions, and had some refreshing sleep. She was so much relieved that the same evening she requested to be allowed to sponge her own face. She took nourishment well, and the respiration continued quite easy. Unfortunately, however, at about 4 A. M. the following morning, whilst being fed, milk was seen to trickle through the cannula, showing that there was paralysis of the pharyngeal muscles and imperfect action of the epiglottis, thus allowing the milk to pass into the larynx. From this time she was fed by a stomach tube, but became gradually weaker, and died quietly from the paralysis extending and interfering with the action of the heart, having lived twenty-eight hours and a half after tracheotomy had been performed with perfect relief to the difficulty of breathing. There can be no doubt that tracheotomy in this case prevented death by asphyxia, and so gave a still further extension of time to cope with the disease, although, unfortunately, death ensued afterwards from paralysis and exhaustion. I feel sure that in diphtheria tracheotomy should be resorted to as soon as any signs of impeded respiration become evident, provided the impediment is not situated in the lungs, and that it should not be resorted to merely as a last resource.

In conclusion, I would say that this disease must be attacked boldly and resolutely, and with a feeling of assurance that in proportion as we do so success will attend our efforts. We must be ever on the watch, and must never relax our efforts for one moment until we feel sure that we have conquered.

SANITARY.

Disposal of House Refuse. Read in the Section of State Medicine at the Fortieth Annual Meeting of the American Medical Association, June, 1889. By Alfred Ludlow Carroll, M. D., of New York.

Household life necessitates the deportation of several different kinds of refuse matter, consisting of excremental substances, liquid wastes from the kitchen and the laundry, baths and basins, garbage, sweepings and dust of various sorts. As regards the first of these; the average for each individual is 57 pounds of fæcal excreta and 114 gallons of urine annually ; or, for a family of five persons, 285 pounds and 570 gallons respectively. The danger from these is not when they are freshly voided, but after decomposition has set in, favoring the evolution of noxious gases and volatile products of putrefaction. Where atmospheric oxygen has free access, the principal results of decomposition are ammonia, carbonic acid, and water ; but in large accumulations, where air cannot thoroughly penetrate, deleterious compounds are generated, bacterial ferments multiply, and ptomainal products are given off in increased quantity. An additional peril arises where the intestinal discharges are impregnated with the virus of specific diseases, such as cholera, enteric fever, and probably other diarrhœal maladies, though even in this case it seems to be requisite for the development of the contagium that decomposition shall have reached a certain stage. When urine is mixed with fæces, fermentation occurs more rapidly and with greater evolution of volatilized organic products. For these reasons it is of prime importance that such matters be removed from any possibility of communication with the interior of the house, or of its inmates, before they shall have time to decompose—that is to say, for practical purposes, within twelve hours.

But a grievous mistake, made by many engineers, and by some superficial writers on hygiene, is to consider the intestinal and renal dejecta as the only things to be cared for, whereas in reality they constitute less than one per cent. of the offensive residua which should be speedily removed from inhabited places. The feathery masses of decaying epithelium from basins and baths, or the organic scourings from soiled clothing, not only afford fertile culture media for microzymes, but are often specifically infected; the culinary outpourings are virtually weak organic broths, responding readily to inoculation; indeed, all the water supplied to the domicile is discharged in so fouled a condition that prudence forbids its retention on or about the premises. There is little difference in the sewage of towns whether excremental matter be admitted or excluded, and in populous communities where "dry methods" are used, it is found necessary to construct sewers in addition. Liernur's pneumatic system and other schemes based upon the single view of the manurial utility of undiluted excreta are open to the same objection.

If the arch enemy of mankind had been asked to suggest the most mischievous method of dealing with these waste products, he could not have devised a more diabolical one than that which is commonly adopted, not alone in sequestered rural regions, but in the majority of villages, and which lingers as a relic of barbarism even in many cities, to wit: the storage of them in pervious privy-pits and cesspools, whence the festering liquefied filth permeates the soil over a wide area, polluting the surface wells, which are usually in convenient proximity, and poisoning with its noxious exhalations the ground atmosphere which is drawn into the basements of ill-constructed houses.

Of the various plans for the "dry disposal" of excreta, the simplest is admixture with dry earth or sifted coal-ashes, using either a shallow cemented pit, a box, or other receptacle above ground, or one of the more elaborate patterns of earth-closets. While this may be practicable for single houses, or for very small hamlets, the difficulty of carrying it out on a larger scale is almost insurmountable. It is estimated that for a population of 10,000 more than a hundred tons of dry earth would be required weekly, and the supply and removal of such a quantity would involve expensive machinery. It is an error to suppose that the fertilizing quality of this earth after use will compensate for its transportation. Even when it has been been redried and used several times it is no richer than ordinary garden soil, and is absolutely worthless as manure. In many places abroad the tub or pail system is employed with more or less satisfactory results, movable vessels receiving the excreta with or without the admixture of ashes, chaff, or other absorbent or deodorizing substances, and being removed once a week or oftener by the public authorities, the more voluminous remainder of the sewage being reserved for irrigation or "intermittent filtration."

In rural or suburban districts, where there is a reasonable amount of ground about the house, with grass or a small garden plot, liquid wastes may safely be distributed on the surface; not poured persistently in the same spot, after the manner of the average handmaiden, to create an artificial swamp close to the foundation walls, but scattered thinly and alternately over a wider extent of growing vegetation. A piece of land 20x25 feet will amply suffice to utilize all the "slops" of an ordinary household, if due regard be paid to their distribution, avoiding, of course, the vicinity of the well, if the water-supply be derived from this source. A neater but costlier plan is "subsoil irrigation" through a branching system of loose-jointed small drain-pipes, laid about a foot below the surface of the ground, so as to distribute their contents within reach of the roots of plants. To render this method effective it is almost essential to collect the sewage in a tank with an automatic mechanism for discharging at stated intervals, since a continual trickling would fail to flow to the terminal branches, and without preliminary subsidence the suspended solids would be apt to clog the pipes in a sluggish current. Too great a descent, on the other hand, will carry all the discharge at once to the farther end of the drains, thus thwarting the purpose of uniform distribution. The proper grade for pipes in this system, according to Colonel Waring, who is one of its strongest advocates, is not more than 6 inches in each 100 feet. Beyond the æsthetic consideration of putting things out of sight, this subsoil system consideration has no special advantage over surface irrigation; indeed, where large quantities of sewage are to be dealt with, the latter is preferable, if it be intermittent. For both methods perviousness of the soil is a pre-requisite, and a clayey or other moisture-retaining ground should first be thoroughly under-drained; for it is to be remembered that the putrifying power of "dry earth" resides not in the earth itself, but in the air contained in its interstices. It is an accepted belief that the bacilli of "nitrification" have their usual field of action in the uppermost two or three feet of a fairly pervious soil, while at a greater depth those which preside over mischievous putrefactive processes predominate. This limitation, however, cannot be arbitrarily fixed, since it depends upon the depth to which the soil is aerated, and in a water-logged earth it may be confined to a few superficial inches. In properly selected or prepared ground the water of sewage (if not too profusely applied) filters downward, leaving its suspended and most of its dissolved matters to the ventilated laboratory above.

A desire for all attainable "modern improvements," conjoined with the imperative demand of the imported domestic vicegerent for "hot-and-cowld-wather-and-stationary-tubs," has brought into general vogue, even in rural abodes, water-closets, kitchen sinks, fixed hand-basins, and the rest of the complicated paraphernalia of the "water carriage" system, if the plumbing arrangements be intelligently planned and well constructed, if there be a sufficient water-supply to flush and thoroughly cleanse all waste-pipes, and if a safe outfall be provided, but which, if made to discharge into a leaching cesspool or to pollute the nearest stream, to the detriment of riparian residents below, is anything but an unalloyed blessing. If a cesspool be permitted in connection with such a system, it should be of small capacity, absolutely water-tight, ventilated by means of an air-pipe reaching above the level of respiration, and emptied frequently. Its liquid contents, which comprise about seven-eighths of the fertilizing materials, may-be utilized in a garden by either surface or subsoil irrigation, and the precipitated solids deodorized with lime, copperas, or other agents, for deportation to such destinations as chance or the public authorities may afford. On a scale of more expensive magnitude, where arable or pasture land of suitable quality is at hand, a well-masoned "settling basin," with an overflow into a distributing tank, answers satisfactorily. In communities with a public system of sewerage the final disposition of the sewage does not concern the householder as an individual, though it should interest him more than it usually does in his collective capacity.

The grosser refuse solids which go under the generic name of "garbage" constitute the bane of social existence, from the domestic "swill-pail" to the "dumps" of large communities. Even where the corporate authorities assume the duty of gathering them from the separate premises they are usually deposited in an aggregate of nastiness at some convenient spot on the outskirts, whence their exhalations vitiate the atmosphere for miles around, or, mixed with mineral rubbish of different kinds, are used by some contractor to fill in prospective building sites, for the gradual murder of future tenants. The common rustic makeshift of burying them in casual shallow pits handily contiguous to the domicile must in time overtax the disinfectant capacity of any soil, and is, as a rule, rather less advisable than the prevalent urban practice of throwing them into a neighbor's gutter or over the roadway. The best way to get rid of such things is, unquestionably, to burn them. Cremation is the manifest destiny of organic matter in all populated places. It means a rapid and innocuous, instead of a slow and possibly dangerous, process of oxidation. In either case organic substances are never destroyed, but their chemical compositions are changed and their elements are profitably recombined in nature's laboratory. In the most humble household the incineration of vegetable matters may be easily effected in a cooking-stove or range, if they be put in a little at a time. An ingenious metallic pail with a water-sealed cover and a hinged grated bottom has been anonymously invented by a member of this Association, in which, when placed over one of the openings of a range, a considerable quantity of garbage can be inodorously dried to the point of combustibility and dropped into the fire. On a larger scale furnaces of different capacities are in common use abroad and to a less extent here which cremate, without offense and at a small expense, all private and public refuse, including slaughter-house offal, street sweepings, etc., from small villages up to great cities. One of the first of these, I believe, in this country has been for some time in successful operation on Governor's Island, in New York harbor, where the orderly in charge informed me that the only element of the garrison jetsam which was passingly malodorous was an occasional burnt-offering of old shoes. In some instances the mineral detritus, which forms a large percentage of city refuse, after being thus freed from organic admixture, is converted into a serviceable cement, as is notably the case in Leeds, where the outlay for maintaining the "destructor" is much lessened by the sale of the resulting product. But, aside from any actual pecuniary return, the economy of this plan of combustion, as compared with other methods of disposal, should commend it to every corporate government. In the notorious Whitechapel district of London, where it formerly cost from half a dollar to a dollar a load to cart away to a distance the household refuse and "dust," all the contents of the East End bins are reduced to a harmless mass of clinker at about one-twelfth of the expense by means of a series of strong draught furnaces, which consume all gases generated during the process. The day is probably not far distant when this method of purification by fire will be adopted for organic waste substances wherever civilized men dwell together. Meanwhile, it is the part of wisdom to prevent their accumulation either above or under ground.

If an apology be due for this brief presentation of rudimentary considerations before an assemblage principally composed of experts, my excuse must be a desire to remind a wider audience, through the publicity given to our proceedings, that the "dry methods," exclusively advocated by a few doctrinaires, are applicable to a very small part of our deleterious wastes; that sewage farming and other schemes for irrigation and filtration involve separate treatment of precipitated solids; that the best devised system of sewerage still leaves on our hands an enormous residum which must be otherwise dealt with; and that no one method of refuse-disposal will satisfy the diverse needs of households and communities.—*Journal of American Medical Association.*

THE CONSTITUTIONAL LIABILITY TO DISEASE. By M. H. Simons, M. D., Surgeon, U. S. Navy.

In the *Sanitarian* for January there is an article by Dr. Schilling on "Heredity in Disease." Dr. Schilling expresses the view which is principally held and and affirmed by the German schools with true national dogmatism, that there is no hereditary transmission of disease, but only of a disposition, by reason of imperfect cell-growth or arrangement, to diseases, and that the disease which arises is simply determined by the exposure at the right time, for a longer or shorter period, to the attacks of a peculiar microscopic organism. I do not dissent from the abstract proposition that the actual disease is not transmitted, but to the statement that its outbreak is always caused and its variety determined by some peculiar organism. It is apparently pretty well established that Americans are too apt to accept or acquiesce in the views of any European who may propound them with sufficient assurance and loudness, and, very much, it seems to me, as we accept our fashions, because we are afraid that we shall be considered ignorant or provincial, if we do not. The German professor with the microscope has done noble work, but the microbe is being overworked. On every possible occasion his worshippers get him under way and crowd him over the course with many gutteral exclamations of pride and admiration. They make him dive and hide and bore; but they have painted him in colors of gold and carmine, so very soon some one with a little eye-piece spots him in his hiding-place, and if his tail has twisted the other way, or his miserable body acquired some new peculiarity, he is entered for the next heat under a new name, and away he goes again.

He appears in so many forms, and always so ready for mischief, that we must conclude that he is the devil's imp who was pictured in lurid colors by old theologians whose eyes of faith were equal to modern microscopes. Does the microbe continue steadily wrestling through the long years with the cell, until, at some opportune moment when the cell is moistening its hands for a fresh grip, or is grasping for its second wind, it grabs it by the throat and kills it outright, or keeps it alive to build up strange growths and pervert its brother cells? Then there is the microbe by whose aid we digest our food, recently discovered by a European microscopist. We pride ourselves on being the monarchs of creation, yet either the microbe, which fits our doughnuts and beans for the proper sustaining of life is superior to us in being able to digest food without help, or it has a smaller one employed in that benevolent office. And where will it end? Is this microbe capable of improvement, mentally and physically, like the rest of animal creation, so that we may hope that our descendants, in Bellamy's era, will be the habitations of forms that will abolish dyspepsia by grappling successfully with the restaurant steak and pie? If so, then the bad microbe will also improve and the future still is dark. Will the time come when we shall have to rear them and care for them, as the fancier does for his poultry, and guests will expect, in lieu of the harmful cocktail so destructive to delicate organisms, a premensal potion of our own private brand of digestive microbes? May we hope that the bad microbes will develop a moral nature which will prevent their taking advantage of every weak spot in the frames of our descendants? Are the bad ones retrograde forms from ancient simian or piscine (to go no farther back) contemporaries of man's progenitors, which were worsted then in the struggle for advancement and have since lived only for revenge? If the latter, then, according to what seems to be nature's plan, perhaps we may hope that they will continue to retrograde until they become impotent for evil, and leave us eventually to work out our own problems of existence in our own way. By scientists generally the theory of evolution has been accepted, and they recognize as potent factors the transmission of physical variations and of habits. No doubt every physician has seen families in which one of the parents died of "consumption" after children had been born; these children were stout and hearty during early years, but at puberty or soon after they died of phthisis in some form, or the disease did not appear until later, about the age at which the parent developed it; in other cases the male children only, or the female only, developed the disease. And so with cancer. We often see the children of parents (of whom one or both is scrofulous) flourish mentally and physically to the age of puberty, then, for several years they have a struggle to live, then a long life of fair health and vigor.

Now did they not inherit a cell motion or habit which stopped, or followed its acquired path, after a certain lapse of time? The parents at a certain age by reason of lack of adaptability, or of force to overcome competition, failed in the struggle of life and nature developed a plan for the extinction of the type. Accidental causes may precipitate the change in the offspring by lowering the vitality; marriage with a similar type may intensify the tendency in the offspring to extinction or retrogression.

We see everywhere in nature the repetition of ancestral forms; we recognize the force of habit and its transmission (as, for a familiar instance, in the setter dog), but we also see that the surroundings (meaning all influencing circumstances) may exaggerate or diminish the reproduction of ancestral peculiarities. The natural tendency, as a whole, seems to be toward healthy growth and higher type. The weakly are crowded out in the race for life, and hence their peculiarities are not so likely to be handed down. By careful selection vegetation can be so modified that its usefulness to man will constantly increase. The vine and tree can be made to bloom earlier, to bear larger and more delicious fruit. With animal life it is the same. This is in line with the unaided efforts of nature which constantly labors to give the best results possible with the environment. Man can accelerate the change by lessening the competition and turning all forces more or less completely to the attainment of a certain result, so that in a few generations the connection between the remote ancestor and the present descendant can only be recognized by a study or picture of the gradations. There seems o be no reason why the human family, by careful and remorseless selection, cannot be changed and improved, just as we change and improve our domestic animals; in fact, the change for the better is going on, but not by deliberate action. Habits of good or evil can be formed and transmitted. The children of tramps are likely to be tramps. But the children of a tramp by a person of different habits are not so likely to follow the footsteps of the tramp parent. There is a tendency to the transmission of physical peculiarities, and these are likely to be in the offspring, if useful, better adapted to their purpose, if useless, less pronounced.

No one denies that there are certain diseases which appear undoubtedly to be caused by micro-organisms; with those I am not dealing. But is it not possible that the diseases which are generally known as hereditary, or which are characterized by perversions of cell-growth or function, are the results of a habit to reproduce the particular state, in these respects, of the parent organism at the time of the formation of the sperm or ovum cell? In other words, a man may have "consumption," accidentally developed in himself, and the sperm cell formed at that time may transmit the tendency to take on that particular form of perverted action, after the organism has passed, more or less completely, through the various stages of growth in the offspring (subject to the environment and transmitted tendencies of the other parent) that had been passed through in the diseased parent. An organism goes through all the stages from infancy to full growth, each year bringing in its turn the peculiar manifestations of that stage of growth. By no delicacy of manipulation or power of lens can there be found in the sperm cell or ovum the various tissues which make the perfect frame, yet the union of the two cells causes each tissue in its turn to appear, and the transmitted peculiarities of the parent forms are faithfully reproduced. So, I repeat, may not these cells, sperm and ovum, have some inherent force which, after a certain lapse of time, or at a certain stage of growth, following always the paths formed in the parent organism, will lead the cells of a whole or part to take on the same perverted motion or function as that found or originated in the ancestor?

A child, for example, does not inherit syphilis; but the formative principle which causes the germ cells from its parent to build a being like its parent, has had stamped into it, incorporated with it, a disposition to carry out those processes set up in the parent which are characterized by perversions of structure and function; this struggles with the opposing disposition to follow the healthy and usual, or normal line of action, and, according to its virulency, or the energy of its initial motion, succeeds more or less completely. The offspring marries a healthy mate, and the disposition to perverted motion and action is less active in their offspring; but he marries an unhealthy mate, the disposition to perversion is intensified. If by any means this disposition to perversion be continued for a few generations it becomes a habit, and age is now an element in determining the date of explosion. Sometimes the disposition to healthy action is so strengthened by environment, marriage, etc., that a generation manifests only slightly, if at all, a diseased disposition, but if in the next circumstances favor, the habit will reappear (atavism). Science by change, by placing easily assimilable and plentiful nourishment at hand, gives the cells all of their powers to struggle to return to healthy action, until they have overcome the tendency to, and passed the period of retrograde and perverted motion and function. May not micro-organisms, in these diseases, simply occupy the position of parasites and scavengers, which throng to the diseased parts, and by their active presence and multiplication tend to increase the weakness and to spread the disease to adjacent parts? They cause, by the irritation of their presence, irritative fever, and so forth.

An Epidemic of Pulmonary Phthisis.—Under the above title Dr. Marfan, chief of the medical clinic of the Faculty of Medicine of Paris, gives the details of a localized epidemic which is at least very significant, and is also a timely contribution to the literature of tubercular infection. In an important business house in the centre of Paris, twenty-two persons were employed about eight hours a day. One of them, aged forty, employed at this place for twenty-four years, had been phthisical for three years, when he died on January 6th, 1878. He coughed and spat upon the floor for three years, and did not leave his work till three months before his death. From that time, out of twenty-two persons employed, fifteen have died. One only died of cancer, the remaining fourteen died of pulmonary tuberculosis. One year before the death of the first person, who appears to have been the starting-point of the epidemic, two employés, who had been connected with the same business for more than ten years, began to cough and spit upon the floor. They died in 1885. Beginning with the end of 1884, the deaths followed each other at closer intervals.

Dr. Marfan states the unsanitary conditions of the apartment in which these persons were employed. It was small, and the cubic air-space was less than ten cubic metres (350 feet) to each person. It was badly ventilated, badly lighted, and the gas was burned a part of each day, especially in Winter. The floor was of wood, uneven, cracked, and very dirty. The first victim of phthisis and those who followed spat directly on the ground, and the sputa becoming dry, was converted in this already unhealthful apartment into a poisonous dust. The room was swept each morning, and sometimes the employés arrived before the sweeping was finished and while the dust was still floating in the air. It was difficult to sweep the room thoroughly, since the tables were fixed to the floor. It appears very probable that the swallowing and inhaling of this tuberculous dust was an essential factor in the propagation of the disease.

The proprietors of the place where the deaths occurred removed and burned the floor, and so rapidly was the work accomplished that the reporter had no time to collect a sample of the dust from the cracks in the floor for the purpose of experiments upon animals. A new floor was laid, which was waxed and treated from time to time with spirits of turpentine, all painted surfaces were repainted, and Dr. Marfan recommended that the floor should be swept in the evening after the departure of the employés, and that the windows should be left open all night.

Dr. Vallin recommends in place of these measures a mixture of equal parts of coal-tar and spirits of turpentine, or of paraffine dissolved in warm petroleum, and in place of the sweeping, the removal of the dust by sponges, or cloths moistened with an antiseptic solution.—*Boston Medical and Surgical Journal.*

The New York Pasteur Institute.—Dr. Paul Gibier, Director of the New York Pasteur Institute, submits the following statement for the month of April:

During that month, seven persons were treated at the Institute.

In three of these cases, hydrophobia was shown to have existed in the dogs by the inoculation of other animals with the nervous substance of the dogs who had bitten the patients.

In the four other cases, rabies was very probable, but the dogs had disappeared, or their carcases had been thrown away instead of being sent to the Institute.*

The patients were 3 from New Jersey, 2 from Illinois, 1 from Massachusetts, 1 from Texas.

The above patients are at present all enjoying good health, as also the 13 persons inoculated during the month of March.

New York, May 10th, 1890.

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* At the last moment we are informed that another person who was bitten by one of these dogs, died with hydrophobia. This person had not been treated at the Institute.

PHARMACY AND THERAPEUTICS.

The Local Treatment of Eczema in Elderly People.—The *local treatment* of eczema in elderly people is a most important element, and will often call for great care in its selection and employment. It is to be remembered that the skin is very delicate and sensitive at this period of life, and that it is very easy to err on the side of strong applications, so that the measures must be mild, certainly at the beginning and until the condition of the individual is perfectly understood.

The local treatment will, of course, vary greatly with the location and character of the eruption present. For generalized eczema, and that on the trunk and limbs, no application is more comfortable and soothing than the well-known one of calamine and oxide of zinc, to which carbolic acid is to be added in varying proportions, according to the amount of itching present (℞ Pulv. calaminæ præp., ʒ ij; zinci oxidi, ʒ iv; acidi carbolici, ʒ j to ʒ ij; glycerini, ℥ j to ℥ jss.; liq. calcis, ℥ j; aquæ rosæ, ad ℥ viij). Sometimes the alkalinity of the lotion is best effected by borax or carbonate of magnesium, and, when more astringency is required, two to four drachms of salicylate of sodium may be added to the lotion. This is to be freely sopped over the service several times daily, or as often as required to allay itching and burning heat, the powder in it being allowed to adhere to the skin, and the part covered only with the ordinary clothing. When there are any exuding surfaces, a trifle of absorbent cotton loosely pulled apart, may be lightly laid on and allowed to adhere ; this then comes off on the next application of the lotion, without doing violence to the part, for dressing should never be torn from these raw surfaces. As the treatment proceeds, the raw points lessen in number and size, until the application of the fibers of cotton ceases to be necessary. Care must be exercised, in applying this cooling lotion to a surface of any extent, not to chill the body too greatly, lest serious consequences might ensue in the way of internal disorders or inflammations.

On more localized patches, especially where there is thickening of tissue with great itching, complete relief can generally be obtained by the use of tar-and-zinc ointment (℞ Zinci oxidi, ʒ j ; ung. picis, ʒ iv ; ung. aquæ rosæ, ℥ jss.) when properly applied. This should be thickly spread on the woolly side of pieces of sheet lint, cut to fit the separate patches ; these are then firmly bound upon them with a light cheese-cloth bandage, and removed once or twice in twenty-four hours. It is often better to use the same pieces of lint for several applications, spreading fresh ointment on them at each renewal. Where the thickening resists the tarry application, a quarter part of diachylon ointment may be added to the above ; in still more rebellious patches a little salicylic acid, ten to twenty grains to the ounce, will aid in the absorbing power.

Ichthyol and resorcin I have not found of much advantage in the eczema of elderly people, except occasionally in obstinate erythematous eczema about the crotch ; here a two per cent., or three per cent., solution in water, with a little alcohol, wiped over the surface once or twice daily, followed by the calamine-and-zinc lotion, will sometimes aid in its removal.

In eczema about the head and face about the most serviceable application is that of a tannin-and-carbolic-acid ointment (℞ Acidi tannici, ʒ j ; acidi carbol., gr. v to x ; ung. aquæ rosæ, ℥ j), kept continuously applied, and renewed as often as it is rubbed off or soaks in. In some of these cases a calamine-and-zinc ointment, with camphor (℞ Pulv. calam. præp., ℈j ; zinci oxidi, ʒ ss.; tinct. camph., ʒ ss.; ung. aquæ rosæ, ℥ j), will prove more soothing. * * *

The *prognosis* of eczema in elderly people is much more favorable than is commonly supposed. The disease is certainly curable in a large share of cases if only the proper means are employed, and in my experience it is little, if any, more rebellious in elderly people than in those in earlier life. Indeed, it often seems to yield even more readily in them than in younger persons, because the active elements of its production—overwork and nervous strain—can be controlled, and, moreover, these patients are commonly more willing to submit to the restrictions necessary for its cure than are many in the more active and engrossing periods of life.—L. Duncan Bulkley, M. D., in *N. Y. Medical Journal.*

Corrosive Sublimate for Granular Lids.—Dr. Arnautus has obtained excellent results in curing this troublesome disease by the application of solutions of corrosive sublimate of strength somewhat greater than is used in this country. He prescribes collyria of corrosive sublimate in the proportion of one to five hundred and one to four hundred, and of this one or two drops are instilled into the eye two or three times daily. He admits that solutions having this strength excite some transient irritation of the conjunctiva, but this disappears in the course of a few minutes, and may be prevented by the antecedent installation of a few drops of a solution of cocaine hydrochlorate. The remedy, he observes, costs little, and admits of easy application, and reabsorption of the granulations soon takes place. The effects of the solution are also well marked in causing the vascularization of the cornea to disappear. The same treatment can be adopted in cases of ulcers of the cornea, many which will rapidly heal under the influence of perchloride of mercury solution. Dr. Arnauts records cases showing the advantages to be derived from its use.—*Annales d' Oculistique.*

The Treatment of Gonorrhœa by Salol.—J. Ernest Lane, F.R.C.S., Surgeon to out-patients, London Lock Hospital; Lecturer on Anatomy, St. Mary's Hospital Medical School.—I have for some time past been prescribing salol in the out-patient department of the London Lock Hospital, and am now enabled to give the results of its administration in fifty cases of gonnorrhœa. I have tested the value of the drug in urethral discharges at all stages, in some cases relying solely upon its use, in others employing an astringent injection in addition. An analysis of the fifty cases shows that six were cured, twenty-four showed considerable improvement, in fifteen cases no change either for better or worse was noticed, while in five cases the symptoms were aggravated. The doses used were from five up to thirty grains, taken three times daily. The beneficial effects of salol manifest themselves in a very short time. When improvement takes place the symptoms show an abatement in from two to seven days; in acute cases the painful micturition is early alleviated; in cases of a more chronic nature the discharge is materially lessened in this time. In ten cases an injection was employed in conjunction with salol; this was when I commenced my trial of the drug, which I gave at first in five-grain doses. I subsequently increased the dose to ten, twenty, and in a few cases to thirty grains, and relied upon its internal administration without the assistance of injections; out of forty cases so treated, an improvement was noticed in twenty within a week, while six were completely cured. Salol is not a mechanical mixture of carbolic and salicylic acids, but appears to be a compound of the nature of an ethereal salt, since phenol can, with some slight difficulty, be obtained from it on saponification. The potassium salt left after the treatement of salol with caustic potash gives with hydrochloric acid an acid which is either salicylic or one of its isomers. Four hours after administration by the mouth of twenty grains of salol traces of carbolic and distinct evidence of salicylic acids, combined with other elements, were found in the urine. In one case the urine was blackened as in carboluria, the patient at that time taking thirty grains three times a day. It is by the action of the pancreatic juice that salol is said to be split up into carbolic and salicylic acids; of this change I was unable to procure any sufficient evidence after having added pancreatine to a mixture of salol. In salol we have, in my opinion, an addition of considerable value to our list of remedies for gonorrhœa; its effect is apparently produced by the action of the urine upon the inflamed urethra, since that fluid contains salicylate and carbolic acids in combination, probably as salicylurates and sulphocarbolates. It may be given in doses of from ten to twenty grains three times daily at any stage of the disease, and in chronic cases an astringent injection will materially hasten the cure. The effect of the drug does not appear to be enhanced by larger doses than twenty grains; when the amount was increased to thirty grains, the urine became blackened and the symptoms did not show any proportionate improvement. I commenced by giving five-grain doses, but this was soon discovered to be too small a quantity, and my results would, I doubt not, have been more favorable had I commenced its administration with a freer hand. I am indebted to Mr. R. J. Carter, house

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* The formula for this solution is as follows: Sodium hydrate, 5 parts; distilled water, 20 parts; bromine, 2 fluid parts. This solution keeps well for about a month, and may be easily prepared in a moment, fresh and fresh as wanted, by keeping a quantity of the sodium solution ready, and then adding the needful proportion of bromine. The latter should be kept in sealed glass capsules, which may be dropped into the solution and broken by a shake. In this way the disagreeable odor and inconvenience of handling the bromine are avoided.

surgeon to the Male Lock Hospital, for his careful investigation into the chemical properties of the drug, and for notes of the progress of the cases so treated.

Cambridge Street, W.

Treatment of Tonsillitis.—Dr. Haberkorn (*Centralbl f. Chirurgie*) has employed with excellent results in the different forms of tonsillitis, applications of salicylic acid crystals with the brush to the affected parts. The mucous membrane is covered with the crystals, which dissolve slowly, protecting the healthy tissues and destroying the infectious matter. The applications are made morning and night, and are not attended with discomfort in children over two years of age. Under their use the inflammation rapidly subsides, and the exudations are cast off. If the latter are extensive and thick, they should be previously dissolved by brushing with a solution of pepsine, ℥ ss, muriatic acid, 8 gtt., water, f. ʒ v, and glycerine, f. ℥ ss. In addition to the local treatment the author recommends a mixture consisting of acid, salicylic, ʒ ss, solut. gum arabic, f. ℥ iss, syrup rubi idæi f. ℥ ss ; one tablespoonful every two hours. This mixture reduces the fever, and affords great relief to the local symptoms.

In cases where the inflammation is of a more chronic type, the following mixture administered in tablespoonful doses every three hours is very effective :

℞ Acid. tannic. - - - - gr. xv.
Tinct. iodi - - - - - gtt. ii.
Aquæ - - - - f. ℥ vi.
Glycerini - - - - - f. ℥ ss.

In cases of quinsy the formation of an abscess may be aborted by applying the following :

℞ Acid. tannic. - - - - gr. xv.
Tinct. iodi - - - - - gtt. ii.
Acid. carbolic. - - - - f. ʒ ss.
Aquæ - - - - - f. ʒ iiss.
Glycerini - - - - f. ℥ ss.

—*Jour. Respiratory Organs.*

The Hacking Cough of Phthisis.—This is at the same time one of the most distressing, and most difficult to control, of the phenomena of phthisis. The incessant coughing, especially the dry cough, renders almost any treatment unsatisfactory. Yet, recently, to my satisfaction and surprise, I found fluid extract of berberis aquifolium, in thirty-drop doses four times a day, most effective ; it was given in a glass of wine. Two special advantages of this medicament are : 1. It does not lose its effect ; 2. It also acts as a decided tonic.

To relieve profound depression and the melancholia that frequently accompany phthisis, I find the fluid extract of kola nut, in ten-drop doses, beneficial when given in a glass of wine of coca (Lorini); the kola enhances the therapeutic activity of the coca. Also, the addition of coca wine thus prepared to each dose of cod-liver oil, enables the most delicate stomach to retain the latter.

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The Treatment of Hereditary Syphilis by the Hypodermic Method.—I was the first to attempt the hypodermic administration of the following substances in the treatment of hereditary syphilis: Calomel, red oxide of mercury, gray oil, and the salicylate of mercury.

The vehicle used for these agents was liquid vaseline. They were administered in doses from 3 to 5 centigrammes (gr. 1-2 to 3-4)—that is, the calomel, the red oxide and the salicylate; the gray oil was used in proportion of from 1-2 to 1 cubic centimetre (♏ viiss-xv). This last was better tolerated than all the others, being almost painless at the time of injection as well as afterward.

The results did not quite equal the anticipations—that is to say, although beneficial, the hypodermic injections do not seem to bring about a complete cure as rapidly as one would be inclined to think in the beginning, although administered at very short intervals (four to ten days). No toxic symptoms, however, were observed.

In a general way, this method, I consider, is less active than that of friction with Neapolitan ointment (ungt. hydrarg); at least, this is what I have observed after repeated trials.—Dr. Moncorvo, *Satelite* for February, 1890.

A Case of Acetanilide-Poisoning.—By S. T. Armstrong, M.D., Ph.D., New Orleans, La.*—While it has been the experience of most physicians that we have used acetanilide in their practice, that different individuals were differently affected by the same dose of that drug, yet, aside from the peculiar pallor, cyanosis of the lips, and occasionally a "sinking feeling," in some susceptible persons, toxic effects have been but rarely met with, or, if met with, have not been recorded.

I am familiar with but two cases of acetanilide-poisoning. The first, a case of Dr. Marechaux, reported in the *Therapeutic Gazette* of December, 1889, in which almost 4 grains of acetanilide were given by mistake to a child 5 months old. In two hours and a half the child was insensible, the eyes turned up, the skin blue. Pupils did not react to light; respiration superficial,—72; pulse imperceptible,—160 per minute; skin cold. A teaspoonful of Hungarian wine was given every hour, and the body was wrapped in a damp woollen cloth to favor perspiration. There was no retention of urine nor vomiting, and in twenty-four hours the child was well.

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* United States Marine Hospital Service.

A second case is reported by Messrs. T. Jessopp Bokenham and E. Lloyd Jones in the *British Medical Journal*, February 8, 1890. A lady, aged 43, subjected to migraine, was given monobromacetanilide .25 gramme (4 grs.) at 10.30 A. M., and the dose repeated at eleven because the headache had not improved. Her lips were then a little blue; but, as the headache did not improve, she took acetanilide, .5 gramme (7 1-2 grs.), at 11.30 A. M., 12.15 P. M., and 1 P. M. She had a good appetite for lunch, was very much cyanosed, and felt "almost intoxicated and very giddy." She took some whiskey and lay down; her headache was worse; she had a sensation of suffocation; a pain started from the cardiac region to the left shoulder, and she lost consciousness. At five o'clock the pulse was 108, respirations 24, temperature 99° F.; mental condition good. At 7 P. M. nitroglycerin, 1-100 grain, was given, and the cyanosis increased. Alcohol, strychnine, and digitalis were then given, and the cyanosis diminished. Urine remained normal, and the patient was well in twenty-four hours. In this case thirty grains of acetanilide and its compound were taken.

The case that came under my observation was at the Lakeside Hospital, Cleveland, O. A healthy young seaman, aged 28, had been treated for hypertrophy of inguinal glands by extirpation. On November 25 he complained of pains in various portions of the body; and, as these increased in severity—notwithstanding the fact that he was on anti-syphilitic treatment—on the morning of the 26th a prescription was writen for antifebrin, ʒ ii, divided into eight powders, with directions that one powder should be taken every half hour until the headache, that was especially severe, ceased. While this was a careless way to write a prescription for this drug, it was expected that one, or, at least, two powders would afford relief; and eight powders were ordered because it was surmised that they would have to be continued daily until the specific action of the anti-syphilitic medicine was obtained.

The nurse faithfully followed the directions, and, as the headache did not cease, the powders were given until eight o'clock, when the last was taken. At this time he was seen at the evening visit of the externe; the patient's skin was cold and blue; there were general symptoms of collapse; he had vomited freely; and in attempting to arise from his bed, fell to the floor unconscious. There was but slight muscular control; the heart's action was very rapid, but the pulse was not taken. Hot bottles were applied to the feet and legs, and whisky was given by the mouth during the night. He did not sleep during the night, and the nausea continued until the next morning.

At the time of my ward visit, on the morning of the 27th, the patient felt very weak, the skin was moist, temperature 100.2° F., and pulse 130, compressible; his respiration was normal; the lips were still cyanosed, and the skin had a corpse-like appearance. His urine was normal. Milk-punch was given during the day, and by evening the patient felt as well as usual.

It would be impossible to state how much of the one hundred and twenty grains of acetanilide was absorbed by the stomach; but it is regarded as more than probable that the last few powders remained in the stomach, and were vomited. None of the vomited matter was saved or examined except by the nurse; it contained some of the food the patient had eaten for dinner and supper.—*Therapeutic Gazette.*

REVIEWS.

ABORTION AND ITS TREATMENT, FROM THE STANDPOINT OF PRACTICAL EXPERIENCE. A Special Course of Lectures Delivered at the College of Physicians and Surgeons, New York, Session of 1889-90. By T. Gaillard Thomas, M. D., Emeritus Professor of Obstetrics and Gynacology. From Notes by P. Brynberg Porter, M. D., Revised by the Author, New York: D. Appleton & Co., 1890. Pp. 112. Price $1.00.

It is very seldom that a work is issued from the medical press of as great practical service to the working physician as this little volume is likely to prove. In it are presented the rich fruits of the long and extended experience of its author on a subject upon which he is qualified as few others to speak.

Dr. Thomas is now Professor Emeritus in the great medical school with which he has been so long connected, and to whose name his brilliant achievements and his exceptionally successful teachings have added so much lustre. When invited by the faculty to deliver a short course of lectures during the past session, he selected the subject of Abortion for the reason, as he tells us, that in looking back over his past career in medicine, he can recall nothing which has caused him more anxiety and doubt than this, or in regard to which he has found it more difficult to get any satisfactory rules from books. He then goes on to speak of the uncertainty and diversity of opinion respecting the treatment of abortion existing in the minds of the profession, andin proof of this he cites a recent discussion in one of the societies, in reading the published reports of which one is struck with the want of unanimity among the different participants. The allusion here is probably to a discussion on abortion which took place during the past season in the Obstetrical Section of the New York Academy of Medicine, and in which a number of accoucheurs of high reputation and extended experience took part.

It is highly important, therefore, that the young practitioner should have a clear idea of the main principles upon which his treatment of abortion should be based; and in the work in question he will find these set forth in a lucid and practical manner which will enable him, with a proper exercise of his own reasoning faculties, to act intelligently in any case of the kind that he meets with. The book is especially valuable, as has been said, because founded on so extensive and varied an experience as that of Dr. Thomas. From it he will learn how to look for the causes of abortion, whether systemic, fœtal, or uterine, and how to prevent habitual abortion, when this is possible. He will learn how to determine in cases where an abortion has begun whether he ought to attempt to stop it or whether he should endeavor to facilitate the process; and he will learn, furthermore, what dangers and complications he is liable to encounter, and how they can be avoided or successfully dealt with, as far as this is practicable. In the latter part of the work Dr. Thomas gives an admirable resumé of the conditions which call for the production of artificial abortion, and of the most prominent methods which have been employed for this purpose; after which he proceeds to give in detail the method which he has personally found to be safest and most efficient, and the adoption of which he strongly urges. In this connection he mentions one very valuable rule which he has always followed, and which—although, as he says, he has practiced medicine for thirty-five years, and naturally has some confidence in his own judgment—he still follows at the present time, viz.: Never induce an abortion without first having a consultation.

The very great importance of securing all the knowledge that is possible in regard to the correct treatment of abortion is sufficiently apparent when we reflect that while the proportion of deaths from this cause may not be large, except perhaps in criminal cases and those where antiseptic methods of treatment are neglected, the number of women who are permanently invalided by abortion is simply immense. It may safely be asserted that if the principles laid down in this treatise were generally observed by the profession, this number would be materially diminished in the future. There are two points on which Dr. Thomas lays great stress which are worthy of special notice. The first is the necessity of guarding against infection of fæcal matter from the anus, and the second, the necessity of guarding against infection from water-closets. To avoid the latter, he lays down the following practical rule: During abortion, or labor at term, never permit a patient to use anything but the ordinary chamber-vessel or commode for alvine evacuations. As he says, nearly all the best hotels in the city of New York are still provided with the old-fashioned pan closets, often immediately adjoining the sleeping apartments, and any lady who is taken with an abortion and uses one of them, is exposed to the danger arising from contact of the vaginal mucous membrane with the emanations loaded with septic germs which come from the closet. In the last chapter will be found some particularly valuable remarks on the chances of error which may arise in connection with abortion, and among the contingencies thus considered are twin conceptions, uterine hydatids, "molar pregnancy," extra-uterine fœtation, and deception on the part of patients.

It may be of interest to note, in passing, that incidentally in the course of one of his lectures, Dr. Thomas takes occasion to express his utter disbelief in so-called maternal impressions. He is entirely convinced that it is altogether impossible for a maternal impression to be stamped upon the body of the fœtus, since a nerve connection between the two has never been demonstrated, and the fœtus is to all intents and purposes outside of the mother's influence. Wherever, therefore, there has occurred a case which has seemed to confirm the old idea of the child being affected in this way, it has been, he thinks, simply a coincidence. An attractive feature of the lectures throughout, it should be stated, is the introduction of valuable illustrative cases, taken from Dr. Thomas' personal experience; and many of them are of exceptional interest.

But the limits of this notice will not permit of further enlargement on the merits of the work, than which, indeed, there could not well be a more satisfactory practical guide to the subject of which it treats. The volume is issued in the admirable manner characteristic of the publishers, and the text, so far as our examination of it has gone, appears absolutely free from typographical errors. The absence of a general index is made up for by the full synopsis placed at the head of each lecture.

A LECTURE ON SEXUAL PERVESION, SATYRIASIS AND NYMPHOMANIA. By G. Frank Lydston, M.D., Chicago, Ill.

ANNOUNCEMENT OF THE NATIONAL UNIVERSITY, 1889-90. Chicago, Ill.

The Local Treatment of Syphilitic Phenomena. By G. Frank Lydston, M.D., Chicago, Ill.

Preliminary Circular of The State Medical Society of Arkansas. At Little Rock, Ark.

Stricture of the Rectum; Intestinal Obstruction; Inguinal Colotomy. By Charles B. Kelsey, M.D., New York.

Remarks of Hypertrophy and Atrophy of Tissue. By G. Frank Lydston, M.D., Chicago, Ill.

Points Noticeable in the Epidemic of 1889-90. By Benj. E. Cotting, M.D.

Text-Book of Medical Chemistry. For Medical and Pharmaceutical Students and Practitioners. By Elias H. Bartley, B.S., M.D. Second edition, revised and enlarged, with 62 illustrations. Philadelphia: P. Blakiston, Son & Co., 1890. Cloth, pp. 423.

Cocoa and its Therapeutic Application. By Angelo Mariani, with illustrations. New York: J. N. Janos, 1890.

Chronic Nasal Catarrh. Three clinical lectures by George M. Lefferts, A.M., M.D. Otitis Media Purulenta, by Dudley Reynolds, M. D. Summer Diarrhœa in Children, by T. N. Love, M.D., and other contributions. Arranged and published by Lambert & Co., St. Louis.

A Treatise on Fractures. By Armand Depres, M.D. Physicians' Leisure Library. Geo. S. Davis, publisher. Monthly, $2.50 per year; single copies, 25 cents.

Essentials of Gynæcology. Questions and Answers Prepared Especially for Students of Medicine. By Edwin B. Creagin, Gynæcologist to the Roosevelt Hospital, New York. Philadelphia: W. B. Sanders, 913 Walnut Street.

Case of Tuberculos Papillomatosa Cutis. By Prince A. Morrow, A.M., M.D. Wm. Wood & Co., New York.

TRANSACTIONS OF SOCIETIES.

Medical Society of London.

PYLORECTOMY.

An ordinary meeting of this Society was held on April 28th, the President, Mr. J. Knowsley Thornton, in the chair.

A paper was read by Sir William Stokes, of Dublin, on "Pylorectomy," and illustrated with numerous diagrams. He said that this operation had hitherto baffled the efforts of surgeons in these islands; and abroad also the results had been discouraging. They were better in Austria and Germany, although the mortality there was alarmingly high. He thought it was better to consider and analyze the causes of surgical defeats than to dwell on operative triumphs; and had not a course such as this been pursued with regard to ovariotomy, that operation would never have occupied such a prominent position as at present. The operation of pylorectomy was still in its infancy. It was only eleven years ago since Péan performed it in Paris, and he had been followed by Billroth, Wölffler, Czerny and others. Owing to the acknowledged and undoubted increase of cancer among the community at large, every operation for its relief demanded attention. Gussenbauer and von Winiwarter, in *Langenbeck's Archiv*, had shown that 60 per cent. of cases of cancer of the stomach were situated at the pyloric end, and in many instances it remained limited to that orifice.

The case on which his paper was founded was that of a woman aged thirty-four, who presented herself as an out-patient on June 4th, 1889, with a history of vomiting sour water and slime, a gnawing pain in the abdomen, and vomiting after food, occasionally in very large quantities. The appetite failed, the bowels were confined, and the urine was scanty and high colored. The symptoms dated from March 3d, there had been no vomiting of blood, and the habits were temperate, though she had been addicted to drinking strong tea. On examination, the anterior abdominal wall was found thin and retracted, and there was a fusiform bulging due to gastric dilatation, which yielded a succession splash; to the right of this was a lobulated tender swelling. A diagnosis of gastric dilatation from cancerous pyloric obstruction was made. On June 25th the stomach was washed out with a 5 per cent. boric acid solution, and the next morning it was again washed out until the fluid returned quite clear. Chloroform being administered, a four-inch incision was made in the abdominal wall to the right of the umbilicus and above its level; the edges of the wound being retracted, the disease was exposed and found to be confined to the pylorus, the omenta being quite free from infection. These were first separated from the stomach by a series of ligatures, the tissues between them being divided, and the pylorus could then be lifted quite out of the abdomen. Dupuytren's enterotome was next applied from the upper or lesser curvature obliquely downwards and forwards over the pyloric end of the stomach, an oblique section of the gastric wall was then made, and a part of it closed by Czerny-Lembert sutures so as to reduce the orifice left to the size of the duodenal section. The enterotome was then applied to the duodenum and the cancerous mass removed. The divided duodenum was attached to the stomach, the posterior wall being joined first. A double series of sutures was applied, the serous and muscular coats being united first, and then the mucous edges were brought into apposition by a second row. In closing the anterior part, the sutures were of course applied in the reverse order, the mucous coats being united first and then the muscular and serous. The patient, who had three semi-syncopal attacks during the operation, was then put to bed. In the evening a sudden failure of the heart's action occurred, and the patient got weaker and died eleven hours and a half after the operation, which lasted two hours and three-quarters.

The author then reviewed five cases of pylorectomy which had been performed in these islands with a fatal result, and referred to the recently published successful case by Mr. Rawdon, of Liverpool. In the latter the pyloric tumor was small, there were no adhesions, there was no extreme emaciation, the serious symptoms were only of some weeks duration, and the operation was not so protracted owing to the use of Senn's plates. An analysis of the five fatal cases showed that the symptoms had existed for a long time, that the patients exhibited great weakness and emaciation, that they had been the subjects of constant vomiting, and that the operation had been much protracted owing to the difficult method of suturing employed. Thus in the sixth case it would be seen that all these unfavorable conditions were absent. The causes of death appeared to have been shock, collapse, inanition and peritonitis. The shock was due to the length of time of the operation, but the collapse could not be altogether due to this ; it depended rather on the emaciation and debility of the patient at the time of the operation. It had been suggested that septic intoxication could occur in these cases from contamination of the peritoneum by osmosis ; but with this the author disagreed, and he thought it was possible to keep the parts aseptic with proper care. From a study of the hitherto published cases it seemed that failure was due to the late period at which the operation was undertaken, and it was also greatly dependent on the introduction of so many and such complicated sutures which took such a length of time to apply. In order to obviate the first cause of failure, he advocated the earlier adoption of exploratory operation, which was one now of comparatively little risk; the size of the growth and the presence or absence of secondary deposits could then be determined, and we could either decline interference or proceed to operation.

As to the method of suturing, it was a question whether a simpler and speedier method would not satisfactorily fulfill the required conditions. He felt confident that a sufficient closure could be made by uniting the serous and muscular coats only, and the continuous suture might be used to curtail the pylorus. Senn's method with decalcified bone plates might also be used, and he showed a model which illustrated their application to the pylorus; it certainly had the advantage of great rapidity. With regard to the results of this operation, in one case four years elapsed before the patient succumbed to recurrent disease; but because the disease might ultimately recur we should not therefore abandon the operation; for if we carried such a reasoning to its logical conclusion, we should also abandon operation for scirrhus of the breast. We should certainly operate if we could obtain a cure or a tardy reappearance of the disease. Nor should we abandon as hopeless the prospect of the discovery of a constitutional therapeusis, and claims to the discovery of a cure for cancer should be carefully examined. But until the day of a constitutional remedy arrived we should strive to render as perfect as possible a local therapeusis. In conclusion, he stated the following propositions: That the disease should be recognised before marked emaciation occurred; that in all doubtful cases exploration should be done to form a just estimate of the disease, to ascertain the presence or absence of adhesions, and to determine the presence or absence of glandular infiltration; that the washing out of the stomach was a desirable antiseptic precaution, and did not exhaust the patient; that a protracted operation promoted shock and collapse; and that it was desirable to determine what was the most effectual and speedy method of inserting sutures.

Mr. Knowsley Thornton thought that at the duodenal orifice it must be almost impossible to be quite sure that an aseptic operation was performed. He considered that males bore operations on the abdomen as well as females, or a little better. He was not convinced that the length of the operation had much to do with the result; his own conviction was that patients with malignant disease bore all operations badly. When any malignant disease attacked the peritoneum a rapid diffusion was liable to happen.

Sir William MacCormac said that the author had taken a more enthusiastic view of the operation than he himself was inclined to do.

He could not conceive that the operation could be performed successfully unless done at a time when the patient was too well to think that an operation was necessary. The blot on the present procedure was the long time the operation took, and any method of suture which shortened that time was an advance in the right direction.

Mr. Bryant said that it was a great question whether patients would submit to an exploratory operation, which in a subject with malignant disease was not to be undertaken lightly. He had on three occasions been called on to consider the question of pylorectomy, but in none of these cases did he consider interference justifiable ; they all died within about a month after being seen, and all had extensive disease, which would have rendered necessary the abandonment of the operation if it had been undertaken. He had performed it eight or ten times on the cadaver, and had come to the conclusion that the best way was to employ Senn's plates. He sewed the edges of the gut over the opening in the plate, and this he found facilitated its application. Very few sutures were required ; about five or six (in addition to the four in the plate) were sufficient.

Mr. Jessett referred to the experiments which he had performed on dogs, which confirmed Senn's results. In cases of pyloric cancer one of the three courses was open—to leave the local disease alone, to perform pylorectomy, or to do gastro-enterostomy. He advocated a second method of using Senn's plates after pylorectomy. Having passed the plate into the duodenum, he invaginated the cut end of the latter into itself and closed it ; the same was done with the stomach, and then, the two being brought together, holes were made opposite to the orifices in the plates. He had done three cases of gastro-enterostomy ; one patient died six days after the operation, and he attributed the fatal result to delaying feeding till the fourth day. In the next case he used catgut instead of silk, and the patient was at present well from the operation, and the stomach had much shrunken. In cases operated on by Senn's method, he emphasised the desirability of early feeding by the mouth.

Mr. Gould referred to a fatal case of pylorectomy at which he had assisted. Having seen that case, which did not present unusual difficulties, he could not help thinking that there was a small place in surgery for this procedure, if there were one at all. He did not think that we should speedily reach a time when early certain diagnosis of these cases could be made, for there were no early symptoms of pyloric cancer which would justify operation. Diagnosis usually depended mainly on the failure of treatment to afford relief, on progressive emaciation, and on the discovery of a tumor, and surgeons were not usually called in until the patients were in a condition unfit for operation. These cases were not usually fatal from the cancer itself, but from the obstruction caused by the stricture of the pylorus, and the question was, What was the easiest way of getting over this obstruction? He held that the safest and easiest way was by the performance of gastro-enterostomy.

Dr. Gilbert Smith referred to the cases of two brothers who had been under his care. One was an instance of rapid pyloric obstruction in a man aged forty-five, who died within a week, and showed at the necropsy a simple ulceration at the duodenal side of the pylorus, which appeared curable by operation. The other brother also presented pyloric obstruction, and this, like the first, was by some considered cancerous, but he got quite well after an exploratory operation, which revealed a cyst pressing on the pylorus. He felt that many such cases could be saved by exploration.

Mr. Barker, though he did not think that pylorectomy was altogether to be consigned to oblivion, thought that gastro-enterostomy was likely to be undertaken in most cases. Lücke had done eleven of these latter operations, of which nine were said to have been successful. In one successful case he had had himself he had used the continuous suture without Senn's plates.

Sir William Stokes, in reply, accepted the President's dictum that males bore abdominal operations as well as females. He thought one need not be very apprehensive as to the results of an exploratory operation. It had been denied that there were early signs of pyloric disease, but stenosis gave rise to distinct symptoms. Gastro-enterostomy should be done where the performance of pylorectomy was precluded by the existence of too extensive disease.

Society for the Study of Inebriety.

On the 1st of April, 1890, the Society for the Study of Inebreity held an interesting meeting in London.

In the course of the President's report he asked the question, "When is a man drunk?"

"Recently it was stated in the House of Commons that it was a publican's business to know when a customer was drunk. A few days previously, a Metropolitan police magistrate was reported to have censured an inspector for calling a medical practitioner to pronounce whether an accused was drunk or sober, and to have stated that no doctor was needed for such a purpose, a policeman being competent to determine the matter. These parliamentary and magisterial dicta are somewhat dogmatic, and are not warranted by all the phenomena of intoxication. I have seen a gentleman, after copious libations, appear perfectly sober till he emerged into the open air, when he became noisily and offensively drunk. I have had patients who maintained a consistent character for sobriety, who drank freely but who never seemed 'the worse for liquor,' till, on an emergency, they had to go out in response to some unavoidable summons, when their intoxicated condition was made manifest. I have seen case after case, which if I had testified to truthfully in the witness box, I would have deemed drunk, and yet a few hours revealed a fatal intercranial lesion. Prisoners have frequently been found dead in a police cell, because the officials in charge looked upon the *detenu* as simply 'drunk.' The determination of whether any one is drunk or sober, is often, even to a medical man experienced in such cases, extremely difficult, as well as unreliable. If it were not so, the ominous heading of 'Drunk or Dying' would not be so conspicuous in the columns of our newspapers. The smell of drink proves nothing, for if the most rabid teetotaler become unconscious on the street from any functional or organic derangement or from an accident, at least one average Englishman will assuredly rush to the nearest public house, and, armed with a supply of brandy, *vi et armis*, pour a quantity of this British panacea for all the ills to which flesh is heir, down the nephalian throat. I have noted only two definite discriminating symptoms, temperature and contraction of pupil. The temperature is usually subnormal in drunkenness, while either normal or supernormal in apoplexy or shock. In intoxication both pupils are contracted, in its absence only one is affected. But here again there may be confusion from the effects of alcohol administered by a bystander, though usually this administration has been too recent to produce a marked alteration of temperature or of the pupils. Neither excitement, violence nor coma, is necessarily of alcoholic production. I have given evidence at inquests on persons who had died unexpectedly without medical advice, simply because they had repeatedly been apparently in the same condition before, and, after a 'dead drunk' sleep, had awoke all right. The friends had said 'drunk again,' and the unfortunate victims on the last occasion never awoke. The term 'drunk' is not satisfactory. I prefer 'intoxicated' or 'poisoned,' and I define intoxication as 'that state in which any person who is affected by an intoxicant, says or does anything which he would not have said or done had he not been under the intoxicating influence.' There are degrees of intoxication, such as in excitement, without loss of control, in maniacal disturbance or drowsiness with loss of control, in paralysis and in coma. This applies equally to the judge on the bench, the doctor in his consulting-room, and the clergyman in the pulpit."

He refused to consider flogging as a remedy and passed on to hypnotism as not being a cure.

"Thirty years ago I was witness to perverted sensations and actions consequent on false beliefs effected on mesmerised subjects by professed mesmerists. Exactly similar phenomena have recently been paraded as demonstrating the efficiency of what is now called hypnotism, and treatment by suggestion, as a cure for inebriety. At that early period I was strongly predisposed to believe in mesmerism as a legitimate and curative agency. Careful observation, however, showed me that this practice is liable to grave abuse, never absolutely free from risk, and uncertain when the patient is susceptible; and that only a minority of persons can be influenced in this way. I have investigated recent claims for the re-habilitation of this process, and have found that under 15 per cent. of the cases have proved susceptible, while in a number of carefully conducted trials the beneficial results have been *nil.* In other cases, though the suggestion against alcohol was declared to be permanent *seances* were insisted on every second or third day for weeks and months. No medical expert of repute in inebriety has endorsed hypnotism as useful in this malady, though marvellous tales of success have been (as indeed such have emanated from similar quarters, *without* hypnotism) claimed by non-medical individuals. My own experience and observation have compelled the conclusion that hypnotism has no practical application in the treatment of inebriety. On the contrary, I have seen its repetition increase the nerve disorder, and thus intensify the diseased condition which constitutes true inebriety. My greatest objection, however, is based on the power which the practice of hypnotism with suggestion gives to the operator over the subject. Such a power ought not to be allowed to any fallible human being, and heinous offences against morals as well as serious crimes have been the consequence. In my judgment, if hypnotism be considered justifiable, it ought to be allowed to be practised only by responsible medical men. Even then, as a protection alike to the practitioner and to the patient, hypnotism should be practised only in the presence of a second registered practitioner, and a record kept of the object, results, and details of the procedure." This is very satisfactory and we find him thoroughly in accord with recent authorities in regard to the criminal responsibility in inebriety when he says:

"Several distressing cases have occurred during the past year, in which justice cannot with propriety be said to have been done. A soldier in France was sentenced to death for striking his superior officer while intoxicated. At Norwich a man was sentenced to death for murdering his mother-in-law under brutally revolting circumstances. Unless a man has wilfully become intoxicated in order to commit a crime, he ought not to be held accountable. He was insane while drunk. If this temporary insanity had had any other cause but alcohol he would have been acquitted. Of course it is at first blush cheaper to hang a man than to keep him for years under treatment; but is this right when he had no criminal intention? The unfairness of treating a diseased person as a criminal is no greater protection to the community than the detention of him in a hospital, while it impairs the dignity and authority of the law. Our whole criminal procedure would be more effectual were our jurisprudence to discriminate criminal acts committed in a state of mental alienation from those committed in the full possession of a man's senses.

"It is a matter of great regret that inebriety is still increasing among females of all ranks, as well as among the young. Unhappily, comparatively few persons recognize the diseased state of the inebriate, and thus every other expedient is usually restorted to (most of these measures being founded on the merely moral view of the habit of intoxication and therefore often hurtful instead of beneficial) before medical advice is sought. May the time soon arrive when inebriety will be everywhere acknowledged to be a disease, the inebriate rationally treated as laboring under a disease, and the progress of the disease arrested by the rectification of all conditions favoring the developing of the disease."

During the course of his address the President (whose name is sedulously excluded from the whole account of the proceedings) spoke of the American Association as having been in existence sixteen years before the foundation of the English Society, and as having achieved much excellent work.

MISCELLANEOUS.

Dr. Wm. T. Lusk, in a paper entitled "Recent Criticisms on Credé's Method of Placental Expression," which he recently read before the New York County Medical Association, expressed the following opinions: The Credé method consists in first applying light and afterward stronger friction to the fundus of the uterus, until an energetic contraction is obtained. At its height the uterus is grasped so that the fundus rests in the palm of the hand, and the body is pressed between the thumb and fingers. The effect of external pressure thus exerted is to force the placenta from the uterus, or, in case of failure, the process is to be repeated. In experienced hands it is likely to be expelled by the third or fourth uterine contraction.

Within the last few weeks a statement had been going the rounds of the medical journals, to the effect that Credé himself had abandoned the method. It was, however, anonymous, and seemed to be entirely without foundation. Statistics showed that the method did not increase the quantity of blood lost, and that unless resorted to too early it did not produce tearing and retention of the membranes, and if this latter accident should occur, it would not, with rigid antiseptic conduct of the labor, enhance the risks of puerperal fever. It seemed tolerably clear that, in most cases, during the first fifteen or twenty minutes after the birth of the child the placenta left the uterine cavity either in whole or in part, and then offered all the conditions favorable for expulsion. But if left to the unaided efforts of nature, long delay usually took place after the placenta had sunk into the lower uterine segment, so that it was a good rule, accepted of late by Credé likewise, not to resort to external manipulations until at least fifteen minutes had expired ; some advocated a delay of thirty minutes.

While some of the leading men in Germany almost prohibited the Credé method, yet he thought the accidents attributed to it, such as post-partum hemorrhage, retention of the membranes, and puerperal fever, had no foundation. As to how long the Credé method should be practiced, he said that personally he could succeed in expressing the placenta during the course of three or four uterine contractions in ninety-nine cases out of a hundred. Where there was adherent placenta, and expression could not be effected in three or four pains, he would not hesitate to pass up his hand and remove it.

Simplicity the Seal of Truth.—Dr. Robert Koch, in the minds of many the foremost scientist and physician of living Germans, is in manner of life the personification of simplicity. His demeanor is said to be so plain and free from self-assertion that, by comparison with him, certain others of his confrères of the Berlin profession appear haughty and unapproachable. As an illustration of Dr. Koch's habits, it is said that when he travels he is quite as apt to be found taking a third-class railway ticket as any other, while the majority of his students would consider their dignity compromised by anything less than a second-class passage. In other matters as well, are indicated attributes of mind and character which place him in the right line of descent from the great Boerhaave, whose favorite motto was "*Simplex sigillum veri.*" And this is the legend that is graven on his monument in the St. Peter's church at Leyden by her grateful citizens—a fact which has put in the mouths of thousands the admirable sentiment, "simplicity is the seal of truth," hundreds of whom have probably dwelt but lightly on their debt to the great professional talents of him whose life was squared to that rule. Simplicity is the trait of the master, while the lack of it seems entirely natural to the novice. As it is the single flower that produces the seed, while the double one beside it perishes with its beauty, so there is that singleness of purpose and simplicity of method that bear the fruit of life-saving discoveries, such as the genius of Boerhaave gave to his generation, and such as Koch's labors promise to yield in surpassing measure.—*Journal American Medical Association.*

FOREIGN BODIES IN THE CRANIUM.—That foreign bodies may remain for an almost indefinite time within the head—in some instances without giving rise to any untoward results—is recognized by the profession, but that they can do so as a rule is rightly denied. The discovery in a recent case of the presence of a knife blade in the head of a patient, which did not, however, penetrate the brain substance, and that of a penholder in the head of another patient, both of whom died of causes quite unconnected with the presence of these foreign bodies, which had been lodged for an unknown period, may have given the impression that they should be let alone—that they are harmless. Wharton some years ago collected 316 cases which had been published of foreign bodies penetrating the skull to a sufficient depth to make it probable that the brain had received injury. Of these the majority were bullets or slugs which had lodged as the result of gunshot injury, but a small number were examples of puncture—twelve by the blade of a knife ; of these a few recovered from the injury. Zacutus reports that a man carried half a knife in his brain for eight years without inconvenience. Turnipseed had a negro under his care for epilepsy, which was cured by the removal of the blade of a knife, an inch and a half long, from the anterior part of the left lobe of the brain, where it had remained for three years. Martin gives a case in which a knife blade was successfully removed after six months ; and another is recorded where a blade had remained only seven days in the brain. In 1838 we placed on record in our columns the history given by Selwin of a child aged four who had fallen on an open knife. The blade penetrated three inches and a half, dividing the optic nerve and levator palpebræ muscle. The attempt at removal was prolonged and troublesome, being attended by hæmorrhage and the escape of some fragments of brain. Recovery was complete, with the exception of blindness of the eye on the damaged side. Gintrac records a case where recovery followed the removal of a knife blade three inches and a half long from the right orbit. It was difficult to extract. No symptom excepting swelling of the upper lid had developed afterwards. The great importance of carefully searching for foreign bodies in scalp wounds is also shown in cases under the care of Dupuytren and Nancrede. To the former, a patient presented himself eight years after the original injury with local signs of inflammation and cerebral abscess; and that surgeon removed part of the blade of a knife, evacuating pus with good result, by incision of the brain beneath some days later. The latter was called upon to treat a youth who had been injured two months previously. Removal of a knife blade which was found in the center of an obstinate ulcer at the point struck was followed by inflammatory symptoms and later by cerebral abscess. The contents of this abscess were evacuated, but the patient afterwards died from hernia cerebri. As examples of recovery from larger instruments which have penetrated the head, we may refer to the man seen by John Dominic Sala, who had perfectly recovered from a sword wound, although the point of the sword remained in his brain for the rest of his life; and the man treated by Fournet, who drove a cabinet-maker's chisel into the top of his head as far as it would go. This was withdrawn with difficulty. It was probable that in this instance brain tissue was uninjured, for in an experiment on the head of a dead body the chisel passed to its full extent in a similar direction in the middle line without wounding the brain on either side, though it divided the longitudinal sinus. These cases of recovery are the exception; all scalp wounds should be most carefully examined for foreign bodies, and the trephine applied if a knife blade or other substance be found.

"Olive" Oil from a New Source.—If there is any plant which does not or would not grow in some part of America it does not occur to us at this writing; and not only so, but there is scarcely any animal or mineral product which is a source of wealth, happiness, or satisfaction to any country or climate outside of this fair land but that it is also produced, or something just as good, if not better than it. The historic olive, which has waved its dark green branches over so many scenes connected with the birth of civilization and religion, flourishes in California as well as in Syria or in Italy, and we can erelong have all the olives and olive-oil of the classical kind that we require of our own production, if we will. But we need not want for olives and olive-oil so long as we have a wholesome substitute quite as good, if not, indeed, in some respects, better.

It is a well-known fact that the olive crops of Italy, France, Spain, and other countries, which have been relied upon for centuries, have been diminishing from natural causes. Fortunately enough, just as the supply of olive-oil is lessening and the price rising the cotton plant is found to give a substitute equal to the genuine. It is a case parallel with that in which the gradual extinction of the whale was rapidly followed by the discovery of petroleum and its products, and their superiority to whale oil, which had been for ages before depended upon as an illuminant and lubricant.

The "olive" plant of America is that which has been grown in our Southern States for many decades. With its appearance and methods of cultivation all are familiar: it is the cotton plant.

This wonderful *gossypium*, with its beautiful flowers and still more beautiful bolls, is fast becoming no less famous as a food product for both man and beast than it has ever been for yielding material for clothing and to make the sails for the white-winged messengers which traverse the world of waters. Besides which it is now being used by millions of tons yearly in the production of food.

After the fibre has been ginned off and the lint removed from the seed for clothing the seed are pressed so as to yield two things: Firstly, an excellent substitute for *olive*-oil as a salad dressing and in cookery; by mixture to improve the flavor and keeping qualities of hog's lard; and as a lubricant in the arts, particularly in wool finishing. Secondly, the compressed oil-cake, from which the oil has been expressed, still retains so large an amount of nutritive material as to be excellent food for cattle, and when insufficient use is found for it for this purpose, is no less excellent as plant food—among the most valuable of manures.

The ancient olive-tree gave shelter and food; the modern substitute, food and clothing.—*The Sanitarian.*

Acute Invagination of Colon.—By John McMunn, L.R.C.P.Ed., L.R.C.S.I., late Demonstrator of Anatomy, Dublin.—A healthy child was given a dose of castor oil by its mother at 10 a. m., on a Friday morning in September, 1889. The drug was given as a purgative after vaccination; it was not required. Result: three curdy evacuations, slightly slimy. At 6:30 p. m., it suddenly kicked out, grew pale, and at 8 p. m. it vomited. Next day (Saturday), at 3 p. m., it evacuated slimy blood, and this was the signal symptom that led to my seeing it. It was a well-developed boy of four months, but now lay in a state of extreme collapse on its mother's lap. It presented the following signs and symptoms, sufficiently distinct to make a diagnostic error impossible. Emesis frequent, the vomited matter resembling thin oil; tenesmus, causing mucus, thin and pink, to ooze from the anus; anuria, from suppression, coincident with the earliest symptoms; flexion, with adduction of left thigh; tympanites, central and superior; abdominal tumor, in position, deep-seated, oblique, and extending for about three inches from the left iliac region, upwards and to the right; rectal tumor, smooth and even, fixed and elastic, becoming tense during efforts at straining. This tumor was manifestly the tangible end of the abdominal swelling.

Treatment.—Abdominal taxis; large oil enemata; belladonna inunctions; nutriment suitable as to time, kind and quantity. An operation was objected to. Death by syncope took place at 10 A. M. on Tuesday.

Necropsy forty-eight hours after death.—Distended small intestine, bulged up from incision; large intestine absent from its normal position; hidden by small intestine lay the tumor recognized during life, to all intents a livid sausage composed of the first two inches of the ileum, and the whole of the colon to within an inch and a half of the anus. The ileum had not passed the illio-cæcal valve. The intussusception had been produced by the invagination of the upper into the lower part of the gut. Between the outer and middle walls of the mass was a quanity of blood-stained mucus; between the middle and inner were strangulated vessels and adherent peritoneum. The mucous surfaces were swollen, soft and moist; the muscular tissue softened and fragile, the serous surfaces when drawn asunder were abraded. The exciting cause of this case seems to have been the administration of the commonest and safest of all laxatives, a drug which acts on intestinal gland and muscular fibre. The analogue of the case is seen in true prolapsus ani produced by straining; its factors were these: an empty canal, a relaxed mucosa, and abnormal activity of intestinal muscular fibre. The gaseous contents of the bowel probably play an important part in preventing invagination and other forms of intestinal obstruction. The sphincters of the rectum favor prolapse by constricting the part of the falling bowel which they encircle, while the longitudinal fibres labor in its expulsion. The rectal sphincters are foreshadowed far up the colon by the accumulation of circular muscular fibres between its saccules. I have seen a case of invagination of the colon reduced by an extensive rectal prolapse, which latter was afterwards reduced and a cure effected.

MEDICAL NEWS AND NOTES.

HOW DOM PEDRO BUILT A HOSPITAL.—The following story of how the ex-Emperor of Brazil raised the money for a charitable institution is told on the authority of Dr. Stellwag, of Vienna: It seems that Dom Pedro longed to have a big hospital at Rio, but that he lacked the money wherewith to build it, and the wealthy people could not be induced to subscribe. Then an idea came to him, as it had to the German Emperor Joseph, a century ago. He began to grant life peerages to all persons who were willing to subscribe good round sums toward the hospital. The patents of count, viscount, and baron were not hereditary, and if the children wished to inherit their father's title they had to pay for it afresh. Brazil became thereby peopled with nobles, and the hospital was built on a grand scale. When it was completed, Dom Pedro had the following inscription placed on its gates: "Vanitas Humana Humanæ Miseriæ" ("Human Vanity to Human Misery.")

OMAHA WANTS THE NEXT MEETING.—The Omaha Medical Society has appointed a committee to invite the American Medical Association to hold its meeting for 1891 in that city. The committee is working actively to gain its point and has sent letters to the various medical societies in this section of the country, urging their delegates at the next meeting of the association in Nashville, to vote for Omaha as the meeting place for 1891. The chief objection to Omaha is its alleged lack of hotel accommodations, but members of the committee claim that the two cities of Omaha and Council Bluffs can together provide for 1,600 guests over and above the average number without any undue crowding.

TIGHT COLLARS AND VISION.—The influence of tight collars in impeding the cirulation in the head by pressing on the jugular veins is well known to military surgeons with the troops in India; but the bad effects of such pressure in cooler climates has been demonstrated by the observations of Professor Förster, of Breslau, who states that three hundred cases have come under his notice in which the eyesight has been affected by the disturbance of the circulation caused by wearing collars that were too small. A large number of these cases were probably subjects of myopia.—*Med. Record.*

HEALTH OF RAILROAD MEN.—According to M. Duchesne, railroad men improve in health during the first four years, but at the end of ten years they are tired out, in fifteen they are actual sufferers, and few can remain in the service after twenty. These general conclusions have been supplemented by Dr. Lichtenberg, of Buda-Pesth, who found from examination that out of two hundred and fifty railway employés, ninety-two, or more than a third, suffered from ear disease. Engine-drivers are especially liable to rheumatism and pneumonia, and after some years of service a certain portion of them become dull of sight and hearing. Others suffer from a mild form of spinal concussion, muscular feebleness, and continuous pains in the limbs. They are apt to develop a peculiar mental state—a sort of cerebral irritation—with excessive nervousness and morbid sensation of fear.

The prison physician, Dr. Gurvich, at Kara in Eastern Siberia, has been highly praised by the press and people for his remarkable courage in refusing to be present at the flogging of Madame Sigida and remonstrating against this shocking piece of Russian brutality.

A Town Without a Doctor.—Presidio del Norte, Mex., a town of some 7,000 inhabitants, is said to be without any resident physician.

Ovariotomy in a Patient with Transposition of Viscera.—On Friday last Mr. Treves performed at the London Hospital an ovariotomy upon a young woman in whom the following conditions were discovered: The tumor was cystic and practically filled the abdomen. The diaphragm was pressed upwards. The heart was noticed to be beating upon the right side of the chest. The presence of the tumor prevented any examination of the abdominal viscera. The abdomen was opened by Mr. Treves and the tumor removed. It was then discovered that all the abdominal viscera were transposed. The liver was upon the left side, the spleen upon the right; the left kidney was lower than the right; the cæcum was in the left iliac fossa, the sigmoid flexure in the right; the aorta ran along the right side of the vertebral column. The stomach was transposed, the pylorus being placed to the left. The tumor had grown from the right ovary. The patient (who was sent to the hospital by Mr. Tandy of Haverhill) is doing well.

Professor Loewig, of Breslau, the oldest teacher of chemistry in Germany, died on March 27th, aged eighty-seven.

Treatment of a Common Cold.—The author recommends 20 grains of salicylic acid in liquor ammoniæ acetatis three or four times daily. Another writer recommends the local application of salicylic acid to the nose.—*Hunter Mackenzie.*

The Law Battery Co., 85 John street, New York, has just finished and shipped a complete electrical outfit to Mr. Lawson Tait, Birmingham, England.

Large Fees.—Recently Dr. Park, of Chicago, at the request of a patient, went to San Francisco, and received the fee of $25,000 for his services, which extended over a period of several weeks ; and we learn that Dr. Samuel Sexton went last week to St. Paul, Minn., where he successfully performed an operation on the ear, for the cure of deafness, and for which a similarly large fee was given.

Statue of Dr. J. Marion Sims.—It is said that this statue will soon be unveiled in New York. It will be remembered that the gathering together of a fund for this purpose was begun soon after Dr. Sims' death, and that physicians from all over the world felt gratified that in this way they would have a small part in erecting a permanent monument to one whom they delighted to honor.

Cholera continues to cause much alarm in Russia. A telegram from St. Petersburg states that the Government is making strenuous efforts to prevent the cholera, which still exists in Persia and Mesopotamia, from crossing the Caucasus. *Las Novedades* remarks in this relation : "If the Government of the Czar treats the microbes of cholera as severely as it is accustomed to treat the Nihilists and other real or supposed enemies of the Government, we need not fear that the terrible disease will reach us by that way." T. P. C.

It is rumored that the Influenza has again appeared in Poland.

The Latest Strategy of a Paris Paper for attracting readers is the engagement of two "eminent" physicians to attend gratuitously upon its annual subscribers. Recently the manager of the paper gave notice to one of the physicians "not to prescribe for B any more ; his subscription has expired." The doctor replied : "So also has B."—*Southern Medical Record.*

Radical Cure of Varicose Veins by Multiple Ligation.—Dr. Phelps applies subcutaneously a large number of ligations to a single vein, by means of a Keyes-Reverdin needle. The operation is indicated in the following cases:

1. When this condition constitutes disability in physical examination—as for admission to the army or navy, or for appointment in a municipal department.
2. When the size of the veins, the formation of venous tumors, or the attenuation of the coats or tegumentary coverings threaten hæmorrhage.
3. When chronic ulceration or eczema exists.
4. When the circulation has been so far impared as to occasion swelling of the feet or loss of power in the limb.—*N. Y. Medical Journal.*

EDITORIALS.

Why Not Advertise?—We congratulate our contemporary, the *Northwestern Lancet*, on its spirited editorial which appeared recently under the above caption. The reasons for writing such an editorial are about as follows: A certain Dr. Brinkerhoff, living in Chicago, insisted upon advertising in the daily papers that he was possessed of peculiar or special skill in treating a certain class of diseases, whereupon the Alumni Association of the College of Physicians and Surgeons of that city, of which he was a member, very promptly and very properly expelled him from the association. After this, the *Chicago Tribune* appeared upon the scene as the champion of the expelled doctor's cause, and attempted to maintain that it is right, proper and desirable for physicians to advertise in order to let the public know where the best medical skill is to be found. It also states that a prominent citizen of Chicago had informed them that he had been cured of a most painful disease by this doctor, after other physicians had been unable to afford the necessary relief, and that he had been induced to apply to Dr. Brinkerhoff by reading his advertisement. Against the universal condemnation of advertising, which, happily, is prevalent among the members of the medical profession, the *Tribune* utters the worn out and hollow wail of "old and absurd custom," and in another place one of its reporters, in a misty sort of manner, speaks contemptuously of "old fogy ideas" and the "musty and silly code of ethics." If every member of the medical profession were to advertise, and with blatant mouths and catchpenny devices try to enlarge his practice, we admit that, pecuniarily, it would be a fine thing for the daily papers, but what would become of the unfortunate sick who might come under their care. For medical men to attempt to teach a great many of the laity wherein their best interests lie, when overtaken by disease, is like trying to untie the Gordian knot. The ignorance of the capabilities of a physician, of disease and its treatment, is not alone confined to the unlearned, but frequently we meet with as much of this same ignorance among those who are regarded as intelligent, in their respective communities, as among those who dwell in huts and hovels and do not even know how to read and write. Can the *Tribune* not see, that by advertising, the practice of medicine would be brought down to the level of a trade, a mere matter of dollars and cents, and would be placed upon the same footing with the practice of numereus quacks and the sale of patent nostrums which do so much harm. The practice of the healing art is so peculiarly different from every other occupation of mankind, that the ordinary laws of barter and trade can not govern it. It is a calling in which so much deception could be resorted to that it is dangerous for any man to forget, for one moment, the moral obligations that are placed upon him. Rolling off the conventional log is nothing compared to the ease with which an unscrupulous man could "pull the wool over the eyes" of the sick. A plausible man, by using a few high-sounding terms, can so mystify his patient and exaggerate his ills as to continue treatment almost indefinitely, and thus extort much money from him. Of course, after a while, this sort of practice would probably react upon those employing it, but in the meantime the practice of medicine will have sunk to a very low plane indeed, many unscrupulous and dishonest men, thinking only of their own enrichment, will have gained accession to our ranks, and what is now the noblest calling of mankind would be in a chaotic and most pitiable condition. Patients would become suspicious of their medical attendants, and confidence on the patient's part would soon cease to exist. A man can buy a barrel of flour or a bushel of potatoes, and, if he be a man of ordinary intelligence, it is not probable that he will be cheated, though he be dealing with a person utterly devoid of honor. Should the goods, however, not be as represented there is probably some redress or, at most, it is only the loss of a few dollars. In the case of sickness it is different. A man, attracted by some showy advertisement, employs, as his medical attendant, one who is utterly unfit to perform the duties expected of him, and it may mean not the loss of a few dollars, but possibly the loss of his health or even life ; surely there is no compensation for such a loss as this. If any practioner of medicine, by reason of natural endowments and special study, is specially fitted to treat any certain class of diseases, it is not long ere his brother practitioners find it out, and soon he is recognized and attains that position to which his qualifications entitle him. The *Tribune* is indeed a poor judge of human nature if it thinks the one who blows his own trumpet the loudest, and proclaims his own deeds to the world is the greatest and the most learned man. Let it remember that in front of greatness modesty always walks with a mien so calm aud dignified as to be truly unmistakable.

INTERMEDIATE TRACHELORRHAPHY.—Under this name Dr. H. J. Boldt of New York proposes an operative procedure different in plan and scope from the usual operation performed for the relief of laceration of the cervix uteri. His views are to be found in the gynæcological Transactions for 1889, to which those interested are referred who wish to study his facts and arguments in full. In the language of this author, "*Intermediate Trachelorrhaphy* is the uniting of a laceration *of the cervix uteri sustained during labor, subsequent to th* *cessation of the lochia, and previous to the occurrence of any pathological change in the organ.*" It has, therefore, the advantage of a prophylactic measure according to its author. The method of operating as described by Boldt is, under strict antiseptic precautions, to seize the cervix with a tenaculum, the patient being in Sims' position, to note the place corresponding to the cervical canal and to avoid it in the denudation. The surfaces of the tear are then carefully scraped raw, beginning at the lowest part; in scraping, it is absolutely necessary, in order to obtain union, to shave off a thin film from every part of the torn surface, as the author correctly states the freshening of the angles of the tear is of paramount importance. He has devised a special instrument for this purpose. The remainder of the surface to be freshened requires no special instrument, a narrow-bladed scalpel or Sims' knife subserving the purpose. The edge of the instrument must be very sharp in order to make the rawing successful. The knife must be sharpened before each operation. The advantages claimed for the operation by Dr. Boldt are, to quote his exact language:

"1. An anæsthetic is requisite only in extremely nervous women, because the pain is almost *nil*; the operation can be done in the physician's office if desired.

"2. It is absolutely free from danger, if properly performed, and the contra-indications borne in mind, which are that no evidence of pelvic inflammatory trouble be present at the time of operation.

"3. The patient can go about as usual after the operation has been done, unless she has had an anæsthetic. In private practice I request her to lie down for two or three hours. Patients in my clinic go home immediately or soon after it is done, and not a single disagreeable result has been noticed in any case; it is a good rule, though, that one first makes himself acquainted with the susceptibility of his patient.

"4. No appreciable tissue is lost, which is of importance; in fact, the reason why I so strongly recommend the operation wherever indicated."

The rule of practice which he deduces from his premises is that a patient should not be discharged from the vigilance of her accoucheur for at least two or three months after her confinement, as he thinks it is eminently necessary that she should be examined about four or six weeks after the confinement, with the view, if a laceration be then found, of repairing it.

Theoretically, there is nothing to be said against this train of reasoning, but in practice it will often be found impossible to apply this principle. Many women will decline to consult the physician two or three months after confinement, from various motives, and hence the physician cannot keep them under observation.

IN MEMORIAM.—*Sims.*—Mrs. Eliza Theresa Sims, widow of the late Dr. J. Marion Sims, died in New York on the 11th of May, 1890, in the 75th year of her age.

Mrs. Sims had been endeared to the Medical Profession by the pen of her husband, as all who have read the story of his life know upon how high a pedestal he had lovingly placed her. His hand and her own heroic qualities will lead her down to posterity side by side with the great genius who won the love and admiration of all.

DURING the months of April and May meetings of State Associations have been rife in all of the States. It is difficult to read the proceedings of them all, and impossible to record them in the JOURNAL, though we hope to publish many of the good papers which were read.

We notice this year a superabundance of papers, and a paucity of discussions. With a few exceptions this has been the tendency of all of these society meetings, and the fact is to be regretted, for free discussions cannot be undervalued. Neither would it be well to place a limit upon the number of papers to be read. Though many of them are not specially valuable, they stimulate the writer and should call forth discussion. In this connection we see nothing to suggest except that each paper should be discussed, and increased time be gained by longer sessions and by fewer social enjoyments.

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